The impact of labor unionization on monitoring costs

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Abstract

This paper analyzes the impact of labor unionization on monitoring costs. Our findings show that monitoring costs are significantly higher for unionized firms. We demonstrate that the more complex, industrial relations structures which characterize unionized firms increase monitoring risks and corporate costs. We further show that monitoring agents consider political ideology supportive to labor unions as a parameter which enhances relevant costs. Additionally, we demonstrate that monitoring costs are lower in the presence of employee share ownership. We conclude that labor unionization increases the costs of monitoring agents, a burden which is amplified or mitigated depending on the structure of industrial relations.

Keywords: Agency costs, labor unions, audit pricing, industrial relations, labor unionization.

JEL Classification: J50, J51, J53, M4, M41, M42.

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1 Introduction

The organization of employees into unions constitutes an important aspect of the industrial relations architecture in the European region (Della Torre, 2019; Wallace, Tiernan, & White, 2006) and in other developed geographical areas (Berg, Kossek, Baird, & Block, 2013; Boubaker, Chourou, Haddar, & Hamza, in press; Weiermair, 1987). Employing various theoretical perspectives (Gahan & Pekarek, 2013), scholars have, *inter alia*, provided insights into: the emergence and institutionalization of unions (Kaminska & Visser, 2011); their changing role and transformations (Harrisson, Roy, & Haines III, 2011); their impact on employee salaries (Bilginsoy, 2013; Hallock & Klein, 2016; Rios-Avila & Hirsch, 2014; West, 2015); as well as; their impact on core corporate matters, including efficiency, productivity, performance, risk-taking and strategic decision making (Hart & Sojourner, 2015; Mueller & Stegmaier, 2017; Volpe, 2014).

Unionization enables employees to advance their claims to better wages, hours and working conditions and to extract rents (i.e., wage premiums) (Bilginsoy, 2013; Hallock & Klein, 2016; Panos & Theodossiou, 2013; Rios-Avila & Hirsch, 2014; West, 2015) through collective bargaining, industrial action and activism (Agrawal, 2012; Chen, Chen, & Liao, 2011b; Chyz, Leung, Li, & Rui, 2013; Faleye, Mehrotra, & Morck, 2006). However, union priorities and actions may cause considerable adversity, known as a "moral hazard", which can harm the firm (Doucouliagos & Laroche, 2009). On this basis, prior studies have illuminated an underlying antithesis between the union role and shareholder wealth (Chyz, et al., 2013).

Agency theory predicts that this antithesis, i.e., the degree of disparity between principal and employee interests, affects the complexity of contractual relations and, thereby, the level of agency costs (Jensen & Meckling, 1976). Prior studies have shed some light on how unionization affects agency costs (Becker & Olson, 1989; Dinardo, Hallock, & Pischke,

1997; Freeman & Medoff, 1984; Huang, Jiang, Lie, & Que, 2017; Jensen & Murphy, 1990; Singh & Agarwal, 2002). However, less attention has been paid to a significant element of agency costs, namely monitoring costs; i.e., budget restrictions, operating rules and auditing (Jensen & Meckling, 1976, p. 323). Given that monitoring is fundamental for corporate operation and development, as well as firm value, we investigate the role of unionization on monitoring costs. Based on prior studies, we employ a widely-accepted and well-specified proxy for monitoring costs: audit fees (Causholli, De Martinis, Hay, & Knechel, 2010; Ghosh & Tang, 2015).

Our examination focuses on a single country so as to obtain a homogenous sample in terms of the underlying: financial and economic development; legal and social structure; politics; public infrastructure; and relevant institutional characteristics. We opt for the U.S. since it remains a highly-influential context and it provides a useful half-way house between countries where unionization is essentially not institutionalized and countries where union presence in corporations is dominant. U.S. unionization rates are very similar to many locales internationally, including many European countries[1]. In addition, similar to the European context where labor organization has remained a central issue in corporate affairs (Gourevitch, et al., 1985; Harvey & Turnbull, 2006; Hunter, 2006; Marchington, 1988), unionization remains an active agenda in the U.S. for market participants and politicians; thus, rich datasets are available. We employ a sample of 2,910 U.S. firm-year observations for the estimation window of 2003-2013.

Our findings suggest that auditors charge unionized firms a significant fee premium, to compensate for incremental business risk. Auditors' risk assessments reflect the higher complexity of unionized contexts and the disparities between the principals' interests and

[1] https://stats.oecd.org/Index.aspx?DataSetCode=TUD (Accessed 26/06/2019).

employees' claims. Hence, in the presence of unions, auditors devote additional time and undertake more thorough audit procedures which, in turn, affect billing rates. This fee premium is persistent after employing different measures of firm-level unionization and simultaneously controlling for additional internal monitoring devices, such as corporate governance and ownership structure.

We also demonstrate that auditors consider political ideology supportive to labor unions as a parameter which increases corporate complexities. We provide evidence suggesting that auditors charge higher fees in states with no enactment of Right-to-Work legislation and in locales dominated by Democrats. Finally, we show that, in unionized contexts where employees participate in ownership, and conflicts between the principal's interests and employees' claims are to an extent alleviated, auditors reduce billing rates since they assess such contexts as less risky. Overall, our findings prove to be robust to alternative definitions of unionization, as well as to specification issues related to variable omission, endogeneity and selection bias.

From a management perspective, comprehension of the fundamental relationship between unionization and monitoring costs is of utmost importance. This should direct managers towards placing considerable emphasis on (re)assessing and enhancing organizational control systems and improving governance policies in order to reduce business risk and the associated monitoring costs. Managers' increased awareness is also imperative in organizational contexts where employees do not participate in ownership, as well as in geographical areas where political ideology supportive to labor unions prevails.

There are concurrent studies to ours in the literature, which provide contradicting results. While Cheng, Mitra, and Song (2017) report a negative association between unionization and audit fees, Bryan (2017) and Fung, Lee, Srinidhi, and Su (2017) report a

positive association, similar to our study. The reasons for this discrepancy might be different estimation windows, empirical models, omitted variables and proxy operationalization of key variables. Our study significantly differs from previous works in a number of ways. First, we develop the richest empirical model, including variables related to corporate governance, ownership and demographics; variables which are not present in previous studies. In addition, we sensitivity-test for other variables and alternative definitions. Second, drawing upon Simunic (1980), we examine the resource-cost and the expected-loss components of audit fees by developing relevant models for auditor litigation risk and audit effort. For the first time, we demonstrate that the fee premium observed for unionized labor is due to audit complexity rather than to litigation costs. Finally, in an important deviation from previous studies, we examine how political ideology, legislation supportive to labor unions and employee share ownership may amplify or mitigate monitoring costs.

We contribute to the existing literature on several fronts. First, we demonstrate that unionization inflates corporate contractual complexities and, thereby, increases monitoring costs. Hence, we support the complementary, rather than supplementary, role of unionization in relation to monitoring agents. Second, we draw attention to the impact of the political costs of labor unions on corporate contractual complexities, demonstrating that a dominant political ideology and legal environment supportive to labor increase monitoring costs in unionized firms. Finally, we further the understandings related to the role of employee share ownership by showing that employee participation in ownership operates as an alignment mechanism, which reduces the perceived conflict inherent to unionization and mitigates agency costs between labor and the principal. As a result, we stress that employee share ownership reduces monitoring costs in unionized corporations.

2 Hypotheses development

2.1 Labor unionization and agency costs

We employ agency theory to understand the relationship between unionization and agency cost due to the emphasis given to the "contractual nature" of firms (Jensen & Meckling, 1976). Contractual arrangements between owners, management and employees are brought to the fore of the analysis (Jensen & Meckling, 1976, p. 310). The degree of complexity of the aforementioned relationships tends to increase agency costs and, in particular, monitoring costs; i.e., procedures such as budget restrictions and strict operating rules, as well as monitoring mechanisms such as statutory audits intended to limit irregular activities (Jensen & Meckling, 1976).

Contractual relations with labor are even more complex when employees are organized into unions (Chyz, et al., 2013). This is because, in order to advance employee claims to better wages, hours and working conditions, as well as to extract rents (i.e., wage premiums) for members, unions employ various tactics such as: collective bargaining; alternative "voice" mechanisms (e.g., participation in company boards and committees); lobbying; litigation; industrial action; and activism (Agrawal, 2012; Chen, et al., 2011b; Chyz, et al., 2013; Faleye, et al., 2006).

Prior literature on financial economics has examined the conflict between union aims and principals' and agents' interests (Chyz, et al., 2013). Unions are primarily concerned with whether employers are in a position to generate enough cash flow to cover wages and benefits, and unions prefer long-term stability (Chen, Kacperczyk, & Ortiz-Molina, 2012; Faleye, et al., 2006). Thus, labor unions develop risk-averse attitudes and influence managers towards adopting more conservative accounting policies (Hsieh, Jung, & Yi, 2017). Indeed, there is evidence suggesting that, "in the presence of unions, corporations spend less on new capital,

take fewer risks, grow more slowly and overall exhibit low total factor productivity" (Faleye, et al., 2006, p. 490); at the same time, they are characterized by less operating flexibility and a higher cost of capital (Chen, Kacperczyk, & Ortiz-Molina, 2011a; Chen, et al., 2012; Faleye, et al., 2006).

Unlike unions, shareholders are residual claimants, while managers often have a significant proportion of their compensation tied to residual claims (e.g., stock options, stock appreciation rights, etc.) (Chyz, et al., 2013). Managers and shareholders are much riskier actors than labor unions and aim to make economically-optimal decisions, intended to increase shareholder value and decrease the cost of capital (Faleye, et al., 2006; Fung, et al., 2017).

The antithesis[2] between labor unions' aims and principals' and agents' interests creates incentives for management to impair organized labor's bargaining power (Bova, Dou, & Hope, 2015; Cheng, 2017). Prior literature indicates that management may firstly resort to enhancing (or maintaining high levels of) information asymmetry, since disclosing information about the firm's financial statements, forecast sales, and production costs and capital investments leads to significantly higher levels of wages and benefits for production employees (Kleiner & Bouillon, 1988). Cheng (2017) demonstrates that firms with strong unions withhold information from the public since reducing this asymmetry could hurt the firm. Managers are also highly likely to withhold good news (Chung, Lee, Lee, & Sohn, 2016) and miss analysts' earnings estimates in order to signal a negative outlook to unions (Bova, 2013).

Furthermore, in unionized firms, management may be more prone to: reporting larger losses (DeAngelo & DeAngelo, 1991); adopting income-decreasing accounting methods for inventory valuation and asset depreciation (Matsa, 2010); immediately recognizing the

[2] However, prior literature is inconclusive as to whether this antithesis results in a loss-loss situation for managers and shareholders or whether more complex valuation effects emerge, particularly under specific governance structures.

accumulated post-retirement benefit obligation (D'Souza, Jacob, & Ramesh, 2001); holding less cash than they would otherwise have held (Klasa, Maxwell, & Ortiz-Molina, 2009); and issuing more debt (Marciukaityte, 2015; Matsa, 2010). Managerial actions to weaken union bargaining power, through employing certain accounting methods and undertaking particular financial decisions, are highly likely to create financial reporting opacity which, in turn, increases the need for more detailed monitoring procedures.

2.2 Labor unions and audit fees

In light of the agency perspective, we consider audit pricing as an ideal proxy of monitoring costs for the following reasons. First, audit pricing constitutes an outcome of the auditors' monitoring role after considering the proprietary evaluation of risks and complexities; this is accomplished by examining both information which is publicly available and inside information which is available only to the auditors through access to corporate files and regular discussions with corporate managers (Ghosh & Tang, 2015). Second, firm performance, which is highly correlated overall with agency costs, is not a major concern for auditors of the large audit firms, since these client firms tend to be profitable (Ghosh & Tang, 2015). Third, compared with other proxies of agency costs, audit pricing models are generally well specified and only vulnerable to limited concerns regarding econometric specifications. For example, their R-Squares are more than 70%, which indicates limited problems of correlated omitted variables (Causholli, et al., 2010). Additionally, reverse causality problems are highly unlikely since employees would not consider audit pricing elements over the election of a labor union at corporate level (Blanchflower, 2007).

We draw upon Simunic (1980) who shows that audit fees consist of a resource cost component and an expected loss component. Prior studies have substantiated that the broader client context influences both the resource and expected loss components in the audit pricing

model (Jha & Chen, 2015). Accepting a client with a high business risk means that the auditor is highly likely to increase the amount of audit work (i.e., higher resource component) or the billing rate (i.e., higher expected loss component), or both (Brumfield, Elliott, & Jacobson, 1983). Thus, audit fees are expected to increase because of the greater audit effort and/or because of assigning the job to the most experienced personnel on the engagement team (Bell, Landsman, & Shackelford, 2001). It is also likely that, in higher business-risk contexts, auditors may merely increase the billing rate in order to compensate for potential litigation costs in the future, without necessarily either increasing the effort made or specifying that experienced personnel perform the audit (Bell, et al., 2001).

In assessing audit risk, auditors consider the complexity of the corporate context (Fung, et al., 2017). Auditing standards, guidelines and professional writings prescribe that an auditor's engagement decision should be based upon a thorough assessment of the client, which is termed "engagement risk" (Bedard, Deis, Curtis, & Jenkins, 2008; Danziger, 1999; Ethridge, Marsh, & Revelt, 2007; Kerr, Grupe, Jooste, & Vreeland, 2007; Thomas, 1992; see also SAS No. 109, AU Sect. 314: Understanding the Entity and Its Environment).[3] An essential component of engagement risk is the client's business risk which, *inter alia*, comprises an assessment of the contractual complexities. Thus, we expect that the presence of labor unions is perceived by auditors as a parameter which increases the complexity of corporate contractual relationships and, therefore, inflates the audit risk factor for reasons concerning negative signaling, financial reporting opacity, and risk/exposure to litigation; these reasons may, in turn, have a great impact on corporate reputation, adverse publicity and potential regulatory sanctions (Ghosh & Tang, 2015).

[3] https://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AU-00314.pdf (Accessed 26/06/2019).

It is therefore expected that, in unionized contexts, a re-planning of the nature, timing and extent of audit procedures takes place (Bell, et al., 2001). Hence, auditors need to devote additional time and undertake more thorough audit procedures, since a higher resource component is associated with unionized firms. Additionally, or alternatively, audit firms may select more experienced auditors and individuals with increased capabilities and skills in order to deal with the complexities associated with the presence of unions. This also entails higher salary rates and, thereby, higher audit-pricing levels. Finally, a higher loss component may be expected since auditors are highly likely to increase the billing rate to compensate for potential litigation processes that may be instigated by unions. Indeed, empirical evidence from Bryan (2017) and Fung, et al. (2017) demonstrates that the association between unionization and audit fees is positive.

However, we cannot rule out the possibility that a negative association is also likely. Cheng, et al. (2017) argue that unionized firms have fewer incentive to demand high-quality audits in order to preserve information asymmetry and bargain advantages over labor unions. In addition, auditors have fewer incentives to provide high-quality audit efforts since unionized firms engage in conservative rather than aggressive accounting choices. The authors support this rationale empirically by reporting a significantly negative association between unionization and audit fees (Cheng, et al. (2017).

Against this background, and due to conflicting empirical evidence, our hypothesis is stated as follows:

H: *Ceteris paribus*, labor unionization is associated with the level of audit fees

3 Research design

3.1 Data

Similar to other studies on audit fees, we commence in the post Sarbanes-Oxley era, since cleaner datasets are available from that point onwards (Francis & Yu, 2009), and we finish in the last available year when this study was initiated. We start with the entire gamut of U.S. publicly-listed firms in the Audit Analytics database; we then cross-check these firms to ensure there are data available across Compustat and Thomson Reuters Eikon databases from which we obtain, respectively, accounting and ownership structure data for the period 2003-2013. From this sample of 6,043 firms, we determine each firm's historical business address as extracted from its filings (as previous studies, e.g., Marciukaityte, 2015). We then exclude 603 firms with headquarters in foreign countries or outlying U.S. territories (e.g., Puerto Rico, the Virgin Islands, and Guam) (Cheng, et al., 2017).[4] Our data requirements for control, ownership structure, corporate governance variables and unionization proxy estimation at industry-level (see in Hilary, 2006) necessitate a further removal of 4,674 firms due to missing data. Similarly to other studies (e.g., Hanlon, Krishnan, & Mills, 2012), we exclude financial institutions (two-digit SIC codes 60-69) and utilities (two-digit SIC code 49), thus eliminating 85 firms because of their different regulatory rules. Next, we exclude another 157 firms since union-recognition data were unavailable through company filings. We remove these 157 firms from our sample in order to avoid companies which are arbitrarily defined as non-unionized. All observations remaining in the final sample correspond to firms clearly disclosing the existence or absence of a union representing employees in their 10-K filings. We further remove 8 firms audited by non-BIG4 audit firms, similar to Bryan (2017), as they represent less than 1.7% of the extracted

[4] We obtain each firm's historical business address through each company's filings, as databases tend to backfill business addresses (Marciukaityte, 2015). First, we download company filings, as available through the Securities Exchange Commission FTP server employed by Audit Analytics for the extraction of audit fee data. Next, we develop a PERL script that parses state code, state name, city, and zip code.

sample and their removal further improves our sample homogeneity (see Behn, Choi, & Kang, 2008). Thus, we are left with a final sample comprising 516 companies, or 2,910 firm-years. The stages of sample selection are reported in Table 1.

[Insert Table 1 about here]

3.2 Measuring labor unionization

We operationalize a firm-level unionization measure to indicate the existence of organized labor (Agrawal, 2012; Cheng, 2017), though we also conduct further sensitivity tests for alternative definitions (see section 6.1). We focus on firm-level due to the lower measurement error (similar to Cheng, 2017; Cheng, et al., 2017).[5] We determine whether company employees are covered by a collective bargaining agreement by drawing upon Item 1 (Business) of 10-K company filings. We download the company filings (available from the Securities Exchange Commission FTP server) and develop a PERL Script, similar to Cheng (2017), to parse sentences relating to union coverage. Similar to Cheng (2017), we employ keyword combinations such as: bargaining agreement(s); bargaining unit(s); collective agreement(s); collective bargain(ing); labo(u)r agreement(s); labo(u)r organization(s); labo(u)r union(s); organized labo(u)r; organiz(s)ed employee(s)/staff/personnel/workforce; work council(s); trade union(s); trade-union(s); union(s) activity(ies); union(s) agreement(s); union contract(s); union organization(s); unioniz(s)ed and union(s). Having parsed sentences related to union coverage, we manually verify and identify 1,755 observations of companies disclosing union representation (*D_UNION*), which serve as the treatment group, and 1,155 observations

[5] Industry-level data rely on data available from the Union Membership and Coverage Database (UMCD), which is compiled from the Current Population Survey (CPS). This is a monthly household survey which suffers from some limitations: a) a uniform unionization pattern across companies in the same industry is assumed. However, recent evidence suggests great variations within an industry regarding unionization rates, implying that a non-uniform pattern exists among companies within the same industry (Cheng, 2017). b) CPS data include both public- and private-sector unionization rates. So there is inherent noise in the calculations of public-sector unionization.

of companies that report no union representation, which act as a control group. Apart from the unionization indicator, we trace 2,402 instances where the exact percentage of unionized employees (*PCT_UNION*) is available. However, we only include this variable as an alternative proxy for unionization (see section 6.1), due to missing observations.

To align our findings with prior literature and additionally examine whether measurement errors between firm-level and industry-level data provide serious impediments to empirical findings, we estimate two unionization proxies employing industry-level data. For these data, we draw upon the Union Membership and Coverage Database (UMCD). Similar to prior studies, we estimate our first proxy (*UNION_IND*) by multiplying the percentage of employees covered by collective bargaining in a firm's primary Census Industry Classification (CIC) industry with the number of company employees over lagged total assets (see for example Bryan, 2017; Chen, et al., 2011a, 2012; Chyz, et al., 2013; Hilary, 2006). Since UMCD data are available in CIC codes, we use a crosswalk list retrieved through the U.S. Census Bureau, and convert CIC to Standard Industrial Classification (SIC) codes[6]. We estimate our second proxy (*D_UNION_IND*) as a dummy taking the value 1 if a company has union rates higher than the two-digit SIC and year median, and 0 otherwise (Chyz, et al., 2013).

3.3 Empirical models

We develop the model for the impact of labor unionization on audit pricing in section 3.3.1. We further investigate this outcome by designing models to ascertain the association between labor unionization and litigation risk (3.3.2), and unionization and audit reporting lag (3.3.3). In all models we regard reverse causality as unlikely, i.e., levels of audit fees, audit lag or lawsuits do not determine the election of a labor union at corporate level. However, we

[6] https://www.census.gov/people/io/methodology/ (Accessed 26/06/2019).

carefully consider issues related to omitted variables (6.2), selection bias (6.3) and endogeneity (6.4) in the sensitivity testing section.

3.3.1 Audit fees and labor unions

Drawing upon Simunic (1980) and the extant prior literature on audit pricing (Causholli, et al., 2010), we estimate our main model whilst considering client, auditor and engagement characteristics (Hay, Knechel, & Wong, 2006). We additionally control for geography and demographics. We measure audit fees by the natural logarithm (e.g., Hay, et al., 2006). Considering that audit fees are sticky over time, we cluster standard errors at a firm level for this and all subsequent models (Srinidhi, Shaohua, & Firth, 2014). The functional form of the model is specified as follows:

$$\begin{aligned} \mathrm{LAF} = {} & \beta_0 + \beta_1 \mathrm{Union} + \beta_2 \mathrm{LTA} + \beta_3 \mathrm{FOREIGN} + \beta_4 \mathrm{OPSEG} + \beta_5 \mathrm{GEOSEG} \\ & + \beta_6 \mathrm{MERGER} + \beta_7 \mathrm{MB} + \beta_8 \mathrm{AGE} + \beta_9 \mathrm{LIT} + \beta_{10} \mathrm{ARIN\_TA} \\ & + \beta_{11} \mathrm{GROWTH} + \beta_{12} \mathrm{LOSS} + \beta_{13} \mathrm{ROA} + \beta_{14} \mathrm{LEV} + \beta_{15} \mathrm{CR} \\ & + \beta_{16} \mathrm{GINDEX} + \beta_{17} \mathrm{CONC\_OWN} + \beta_{17} \mathrm{LEAD\_SIC} + \beta_{19} \mathrm{AUD\_CH} \\ & + \beta_{20} \mathrm{COMP\_AF} + \beta_{21} \mathrm{AUD\_LAG} + \beta_{22} \mathrm{DEC} + \beta_{23} \mathrm{D\_RES} + \beta_{24} \mathrm{SOC\_CAP} \\ & + \beta_{25} \mathrm{DIST\_SEC} + \beta_{26} \mathrm{POP} + \beta_{27} \mathrm{LITERACY} + \sum \mathrm{YEAR} \\ & + \sum \mathrm{INDUSTRY} + \varepsilon \end{aligned} \tag{1}$$

The vector *Union* represents the union-related variables employed to capture the impact of unionization on audit fees. We include firm-level (*D_UNION*) and industry-level unionization proxies (*UNION_IND* and *D_UNION_IND*) as discussed in section 3.2. Given that there are analytical explanations of control variables available in the relevant literature (Causholli, et al., 2010; Hay, et al., 2006), we only provide a brief account of their importance here in relation to audit fee levels and operationalization.

Client attributes refer to size, complexity, inherent risk, profitability, leverage, governance and ownership form. *LTA* captures firm size. We control for complexity through *MERGER*, *FOREIGN*, *OPSEG*, *GEOSEG* and *MB* (Fung, et al., 2017; Hay, et al., 2006). *MERGER* and *FOREIGN* are dummy variables signifying merger or acquisition and foreign operations respectively (Cheng, et al., 2017). *OPSEG* and *GEOSEG* represent the number of operating and geographic segments respectively, both expressed as natural logarithms, and demonstrate the operational and geographical dispersion of the client (Causholli, et al., 2010).

We control for inherent risk by considering *LIT*, *ARIN_TA*, *GROWTH* and *AGE*. The dichotomous *LIT* indicates the existence/non-existence of a legal proceeding involving the client in the current year (Leventis, Dedoulis, & Abdelsalam, 2018). Dechow, Ge, Larson, and Sloan (2011) classify account receivables and inventory among the accounts most frequently associated with earnings management, and thus the ratio of accounts receivables and inventory over total assets (*ARIN_TA*) is included in our analysis. High-growth firms have a greater demand for audit services compared to low-growth firms (Choi & Wong, 2007) and they are often considered to be high risk by auditors (Hay, et al., 2006). Thus, we account for the percentage change in firm sales from the previous year (*GROWTH*). We also include (*AGE*) measured by the natural logarithm of years the firm appears in Compustat. We do not form a strong expectation about the sign of the coefficient, since prior literature reports inconsistent evidence (Bryan, 2017; Hope & Langli, 2010). We further control for profitability and leverage. Thus, we include *LOSS* which indicates the existence of a negative net income in the previous year, and *ROA* which is the ratio of income before extraordinary items over total assets. We also consider the ratio of total debt over total assets (*LEV*) and the ratio of current assets over current liabilities (*CR*) (Bryan, 2017; Causholli, et al., 2010).

We additionally control for ownership structure and corporate governance attributes, since prior literature suggests that they warrant consideration (Hay, et al., 2006). We include

the existence of shareholders with at least a 20% stake of total firm shares (*CONC_OWN*) as a monitoring device which impacts negatively on audit fees (Desender, Aguilera, Crespi, & GarcÍa-Cestona, 2013). We further focus on: the proportion of nonexecutive board members over the total board size (*BODINDEP*); the average number of other corporate affiliations held by board members (*BODAFF*); the number of board meetings held (*BODMEET*); audit committee expertise (*AUDEXP*) (Krishnan & Visvanathan, 2009); and CEO duality (*DUAL*) (Gul & Leung, 2004); since prior studies suggest they are all important determinants of audit fees (Srinidhi, et al., 2014). We follow Srinidhi, et al. (2014), and calculate the board's governance (*GINDEX*) strength by aggregating *BODINDEP*, *BODMEET*, *AUDEXP*, *BODAFF* and subtracting *DUAL*.[7]

We also control for auditor attributes. We include auditor specialization (*LEAD_SIC*) and we define specialists as the audit offices with the highest total revenues in an industry per year; industries are defined using the two-digit SIC (Reichelt & Wang, 2010). We further sensitivity-test the operationalization and cut-off points of this proxy (see section 6.2). In addition, we consider auditor switching, measured as auditor change compared to the previous year (*AUD_CH*). We also control for audit market competition (*COMP_AF*) (Jha & Chen, 2015), calculated according to the Herfindahl-Hirschman concentration index; i.e., defined as the sum of the square fractions of the audit fees an auditor generates in a two-digit SIC-county combination. We additionally control for engagement attributes, considering: the time elapsed from the year-end until the signature date of the auditor (*AUD_LAG*); fiscal year-end in December (*DEC*); and the existence of a financial restatement (*D_RES*) (Bryan, 2017).

[7] Similar to Srinidhi, et al. (2014), we standardize each continuous variable to fall within the range [0, 1]. We scale *BODMEET* and *BODAFF* using the maximum value in our sample. The only component of the index that differs from Srinidhi, et al. (2014) is *AUDEXP*; in the Srinidhi, et al. (2014) paper, *AUDEXP* represents the percentage of financial experts in the audit committee, whereas in this study we take the extreme values and measure *AUDEXP* in a binary fashion.

Finally, we control for the geographic and demographic attributes of client headquarters. To do so, we regard corporate headquarters as the main place of managerial decision making (Coval & Moskowitz, 2001). We echo recent studies and incorporate the social capital of firm headquarters (*SOC_CAP*) (Jha & Chen, 2015) and the distance from the nearest SEC office[8] (*DIST_SEC*) (Kedia & Rajgopal, 2011). Measured at county level, we also include the population of firm headquarters (*POP*) (Hay, et al., 2006) and the percentage of adults who have completed four years of college or higher (*LITERACY*) (Jha & Chen, 2015) as factors influential to audit pricing. All definitions for this and subsequent models are presented in the Appendix.

3.3.2 Auditor litigation risk and labor unions

We investigate the litigation-based explanation of audit fees by building a model for auditor litigation risk, based upon prior literature (Ghosh & Tang, 2015; Kaplan & Williams, 2013; Lys & Watts, 1994; Shu, 2000). We specify the following probit model:

$$\begin{aligned} \text{LIT\_AUDITOR} = {} & \beta_0 + \beta_1 \text{Union} + \beta_2 \text{GINDEX} + \beta_3 \text{CONC\_OWN} + \beta_4 \text{LTA} \\ & + \beta_5 \text{KMJRDA} + \beta_6 \text{GROWTH} + \beta_7 \text{ZSCORE} + \beta_8 \text{OPCF} \\ & + \beta_9 \text{INVENTORY} + \beta_{10} \text{REC\_TA} + \beta_{11} \text{LOSS} + \beta_{12} \text{RET} + \beta_{13} \text{RETVOL} \\ & + \beta_{14} \text{AUD\_LAG} + \beta_{15} \text{UNQOP} + \beta_{16} \text{STENURE} + \beta_{17} \text{TECH} \\ & + \beta_{18} \text{SOC\_CAP} + \beta_{19} \text{DIST\_SEC} + \beta_{20} \text{POP} + \beta_{21} \text{LITERACY} + \sum \text{YEAR} \\ & + \sum \text{INDUSTRY} + \varepsilon \end{aligned} \tag{2}$$

[8] We obtain the latitude and longitude data for each firm's headquarters using the U.S. Census Bureau's Gazetteer city-state files (www.census.gov/geo). Next, we compute the distance between corporate headquarters (point a) and urban areas (point b) using the following formula: $d(a,b) = across[cos(a_1)cos(a_2)cos(b_1)cos(b_2) + cos(a_1)sin(a_2)cos(b_1)sin(b_2) + sin(a_1)sin(b_1)\,]r$. Where: a_1 and b_1 are respectively the latitudes and longitudes of the two points (expressed in radians) and r denotes the radius of the earth (approximately 3,958 statutory miles).

We approximate auditor litigation using the data available in the Audit Analytics litigation dataset. We additionally examine the records of Stanford Class Action Clearinghouse but fail to trace any additional lawsuits against auditors in our sample. We create a dummy variable equal to 1 if the audit firm is named as defendant in a lawsuit and 0 otherwise (*LIT_AUDITOR*), thus measuring the direct exposure of an auditor to litigation risk (Ghosh & Tang, 2015).

Next, we describe the control variables included in the audit risk model. We include: *GINDEX* and *CONC_OWN*, as previously described, since corporate governance and investor monitoring affect auditor's exposure to litigation risk (Cassell, Drake, & Dyer, 2018); client size (*LTA*), since larger clients receive greater exposure to market scrutiny; cash flow from operations scaled by total assets (*OPCF*) as a performance measure (Kaplan & Williams, 2013); abnormal accruals (*KMJRDA*) as a measure for earnings quality, based on the cross-sectional modified version of the Jones model and adjusted for performance (Kothari, Leone, & Wasley, 2005); corporate financial condition (*ZSCORE*), since managers' incentives to mislead increase when the firm is in financial distress (Lys & Watts, 1994); and *GROWTH*, since high-growth firms have greater difficulty in establishing and enforcing internal controls (Lys & Watts, 1994). As an auditor's propensity to face a lawsuit increases with the levels of inventory and accounts receivable (Lys & Watts, 1994; Shu, 2000), we consider the ratio of inventory (*INVENTORY*) and accounts receivables (*REC_TA*) scaled by total assets. Since both loss reporting and unqualified opinion issuance increase the probability of lawsuits (Shu, 2000), we include *LOSS* and *UNQOP* in our model. We also account for the following: audit effort (*AUD_LAG*); auditor-client relationship being less than three years (*STENURE*); firm's stock returns over the fiscal year (*RET*), as a measurement of investor losses; and the variance of abnormal stock returns (*RETVOL*) (Kaplan & Williams, 2013). We additionally include the client's membership of a high-tech industry (*TECH*) (Ghosh & Tang, 2015) and the geographic

and demographic characteristics of firm headquarters (as presented in section 3.3.1: *POP*, *LITERACY*, *DIST_SEC* and *SOC_CAP*).

3.3.3 Audit report lag and labor unions

Audit report lag can proxy for audit investment and complexities (Bamber, Bamber, & Schoderbek, 1993), and unions can affect audit report lag, as discussed in 2.2. Based on prior literature (Bamber, et al., 1993; Ghosh & Tang, 2015; Knechel & Payne, 2001), we specify the following model:

$$\begin{aligned} \text{AUD\_LAG} = {} & \beta_0 + \beta_1 \text{Union} + \beta_2 \text{GINDEX} + \beta_3 \text{CONC\_OWN} + \beta_4 \text{LTA} + \beta_5 \text{KMJRDA} \\ & + \beta_6 \text{UNQOP} + \beta_7 \text{ROA} + \beta_8 \text{MB} + \beta_9 \text{LEV} + \beta_{10} \text{AGE} + \beta_{11} \text{FOREIGN} \\ & + \beta_{12} \text{MERGER} + \beta_{13} \text{AUD\_CH} + \beta_{14} \text{DEC} + \beta_{15} \text{SOC\_CAP} + \beta_{16} \text{DIST\_SEC} \\ & + \beta_{17} \text{POP} + \beta_{18} \text{LITERACY} + \sum \text{YEAR} + \sum \text{INDUSTRY} + \varepsilon \end{aligned} \tag{3}$$

We control internal firm-monitoring strength by including corporate governance (*GINDEX)* (Niemi, 2005) and concentrated ownership (*CONC_OWN*) (Leventis, Weetman, & Caramanis, 2005). Larger firms (*LTA*) not only have the incentives, but also the capability, to reduce audit lags through increased monitoring and advanced technologies (Knechel & Payne, 2001). We consider *KMJRDA* in order to control for the influence of aggressive accounting (Blankley, Hurtt, & MacGregor, 2014). We also control for the following: unqualified audit opinion (*UNQOP*); profitability (*ROA*); risks associated with growth opportunities (*MB*) (Knechel & Sharma, 2012); financial condition (*LEV*); and corporate age (*AGE*) (Lee, Ingram, & Howard, 1999). Complexities which might delay the audit are included by considering *FOREIGN, MERGER, DEC and AUD_CH*. We conclude the model specification with the specific demographic characteristics of firm headquarters, i.e., *POP*, *LITERACY*, *DIST_SEC* and *SOC_CAP*.

4 Empirical results

4.1 Univariate analysis

We present the descriptive statistics of the entire sample, both unionized and non-unionized companies, in Table 2. We also present a comparison of means and corresponding statistical significance between the unionized and non-unionized firms. The two groups differ in terms of size, growth, profitability, cash holdings, asset mix and leverage; however, they share similar characteristics for ownership structure, auditor and engagement attributes. These findings support prior literature, demonstrating that firms facing union bargaining positions strategically hold less cash (Klasa, et al., 2009), more inventory and more debt (Matsa, 2010), as well as having volatile cash flows (Chen, Liao, & Tsai, 2011c) and lower profitability (Lee & Mas, 2012). All continuous variables are winsorized at the 1st and 99th percentile to mitigate any effects from outliers. Unionized companies are found to be charged with higher audit fees compared to non-unionized companies, as the mean (median) values of *LAF* are 15.284 (15.259) and 14.489 (14.473) respectively, with the difference being statistically significant at 1%.[9] The descriptive statistics of *LAF* are very similar to prior relevant studies (Bryan, 2017; Cheng, et al., 2017; Fung, et al., 2017).

With respect to other control variables in the audit fee model, the mean (median) value of *GINDEX* is 1.549 (1.372), slightly greater than the values reported in Srinidhi, et al. (2014). The mean *AGE* of our sample companies is 3.191 (similar to Leventis, et al., 2018), while the mean values of *CR*, *ROA*, and *LEV* are 2.152, 0.059 and 0.242 respectively, indicating that our sample firms are not particularly liquid, profitable, or leveraged; these findings are similar to some prior studies (see Gul & Goodwin, 2010) but different to others (Cheng, et al., 2017).

[9] We examined the audit-pricing pattern of unionized and non-unionized firms, per Big-4 audit firm. Untabulated results indicate that all Big-4 auditors charge unionized firms with higher audit fees, statistically significant at 1% (see Table S 3 of the online Supplementary Material).

Additionally, 66.6% of firms have a financial year end on 31 December (identical to Jha and Chen (2015) and smaller than the mean value reported in Bryan (2017) – i.e., 0.7); while approximately 34% are audited by industry specialists, which is similar to Cheng, et al. (2017). Interestingly, around 35% of our sample firms have been involved in a major litigation, which is lower than the value reported by Bryan (2017) and Fung, et al. (2017) for their industry-based litigation measure. Finally, county-level control variables (*SOC_CAP*, *POP* and *LITERACY*) are similar to those reported in Jha and Chen (2015).

[Insert Table 2 about here]

We present a Pearson's correlation matrix in Table 3, where almost all variables are correlated significantly with *LAF*, with *LTA* exhibiting the highest coefficient of 0.71. Labor unionization is significantly correlated with *LAF* at 1%, which remains strong and positive for all alternative operationalizations of labor unionization. *OPSEG* and *GEOSEG* are correlated at 0.66, and *ROA* and *LOSS* at -0.67 which is relatively high. We keep these variables in the main model for reasons of comparability with prior studies, while sensitivity testing our main inferences after their exclusion (see Table S 6 of the online Supplementary Material). We separately include each of these variables in our model and observe that the inferences for our main independent variable (*D_UNION*) remain unchanged. All other inferences make economic sense and suggest that multicollinearity is not a serious problem.

[Insert Table 3 about here]

4.2 Multivariate analysis

4.2.1 Impact of unionization on audit fees

The results of the audit fee model are presented in Table 4. All regression models are significant at 1%, with explanatory power of around 79%. The coefficient of *D_UNION* is

positive and statistically significant at 1% (column 1, β=0.164, t-stat=3.59), which supports the hypothesis. Thus, audit firms achieve audit premiums when auditing unionized firms. If a company becomes unionized it will pay an increase in audit fees of around 18% ($e^{0.164}$=1.1782 - 1=0.1782), i.e., an average increase of $0.882mil[10] per year per firm, which is economically material in absolute terms. *UNION_IND* is significant at 5% (column 3, β=8.981, t-stat=2.00), while *D_UNION_IND* is significant at 1% (column 2, β=0.127, t-stat=4.46). Thus, no matter how unionization is measured, our findings indicate that auditors charge unionized firms significantly more. The results also indicate that measurement errors related to industry-level data are not material, and therefore do not lead to misleading results, which lends further credibility to evidence reported by prior literature.

All coefficients across control variables have the predicted sign (apart from *GINDEX* and *MB*), with firm size (*LTA*) receiving the highest t-statistic. Overall, less-profitable and more-diversified firms, as well as firms operating with greater levels of inherent risk (*LIT*, *ARIN_TA* and *GROWTH*), pay more audit fees. Additionally, more complex audits (*AUD_LAG* and *DEC*) demand premiums. *LIT* has a significant and positive sign which suggests that litigation is an important element of the inherent risk that auditors consider when organizing and executing the audit (see Hay, et al., 2006). The negative coefficient of *AUD_CH* requires some further investigation to verify whether low-balling takes place (DeAngelo, 1981). *LEAD_SIC* is significant with a positive sign, suggesting that when audit firms dominate a market sector they achieve fee premiums (Francis, Reichelt, & Wang, 2005). Finally, a fee discount is detected when a firm is located away from the SEC radar, in areas with high social capital or with a less-educated population. In all models, the mean VIFs are less than 1.52, implying no multicollinearity.

[10] Estimated as 18% * $4.905mil ($4.905mil is the average audit fee obtained from Table 2).

Overall, our results support prior literature and demonstrate that audit pricing is affected by client, auditor and audit-engagement characteristics. They also indicate a positive association between unionization and audit pricing and, thus, provide empirical support for the complementary role of organized labor as regards monitoring costs (Bryan, 2017; Fung, et al., 2017).

[Insert Table 4 about here]

4.2.2 Unionization and auditor litigation risk

Litigation risk determines audit fees (Choi, Kim, Liu, & Simunic, 2009) and, thus, the higher fees detected for unionized firms might be due to the enhanced litigation risk associated with organized labor. Therefore, we examine whether the presence of unions entails a higher and direct litigation risk for auditors. Within our sample of 2,910 observations, we identify 20 cases of lawsuits filed against auditors related to a client's financial reporting matters (see Table 5). An auditor may be subject to more than one lawsuit per case, as multiple parties file lawsuits against auditors. Following Ghosh and Tang (2015), we include one observation per client/auditor. Therefore, the likelihood of an auditor being sued is approximately 0.69% (=20/2,910). Of the 20 lawsuits, 14 relate to unionized companies while the remaining 6 involve non-unionized companies, with the corresponding likelihoods being 0.80% (=14/1,755) and 0.52% (=6/1,155) respectively. Despite the difference in incidences of a lawsuit, the difference between the likelihood of the two groups is not statistically significant.

[Insert Table 5 about here]

We further conduct a probit analysis using the *LIT_AUDITOR* as dependent variable (see Table 6). We present three columns where we gradually include year and industry-fixed effects. We do so to maintain the same number of observations as other pooled tests, since including year and industry-fixed effects results in a loss of observations for years and

industries that have no lawsuits filed. The pseudo R-Square is around 36%, which is high when compared to relevant studies (Ghosh & Tang, 2015). The coefficient of *D_UNION* is -0.168 (see column 1 in Table 6) and non-significant (t-stat=-0.81). Thus, the findings suggest that fee premiums are not due to a higher litigation risk.

[Insert Table 6 here]

With respect to the other coefficients, *GINDEX* and *CONC_OWN* exhibit positive and significant coefficients, indicating that an auditor's probability of facing a lawsuit increases with the existence of stronger governance and concentrated ownership within the client firm. These findings are in line with prior studies, as larger clients with longer report lags (Kaplan & Williams, 2013) and higher levels of accounts receivables (Lys & Watts, 1994; Shu, 2000) are associated with an increased probability of auditor lawsuits. In addition, financially-healthier companies (*ZSCORE*) located in areas with higher social capital are associated with a lower probability of auditor lawsuits (Jha & Chen, 2015).

4.2.3 Unionization and audit report lag

We examine whether auditors consider labor unionization as a complexity in audit engagements. This could require additional audit effort which would explain higher audit fees. We proxy audit effort with *AUD_LAG*. The results reported in Table 7 indicate that *D_UNION* is 1.959 and significant at 1% (t-stat=2.75).[11] The adjusted R-Square is 20.7, similar to prior studies (Leventis, et al., 2005). Regarding the remaining coefficients in the model, larger, more profitable and financially-healthier companies seem to require less effort from the auditor, which is similar to prior studies (Leventis, et al., 2005).

[11] Our inferences remain unchanged when we use the natural logarithm of audit report lag as the dependent variable, since the coefficient of *D_UNION* remains positive and statistically significant at 1%.

[Insert Table 7 here]

We conclude that the fee premium observed for organized labor is due to audit complexity rather than to litigation costs.

5 Extensions

We extend our investigation by testing whether the prevailing political ideology inherent to labor unions' power and outcomes plays any role in audit pricing. First, we examine whether the impact of unions on audit fees is dissimilar between states which enact Right-to-Work legislation (RTW) and those which do not, since evidence suggests that such laws decrease union organizing and power (Cheng, 2017; Marciukaityte, 2015; Matsa, 2010). Second, we investigate whether the impact of unions is different in locales dominated by the Democratic Party, as the literature associates Democrats with increased union power (Chen, et al., 2011a; Marciukaityte, 2015). Finally, we test whether employee share ownership, suggested as a mechanism that aligns the interests of employees to those of principals (Richter & Schrader, 2017) and weakens employee commitment to trade unionism (Poole & Jenkins, 1990), impacts on audit pricing.

5.1 Labor unions and Right-to-Work laws

RTW laws grant unionized employees the right to opt out of union membership (see Ellwood & Fine, 1987; Holmes, 1998). There is convincing evidence which demonstrates that RTW laws are associated with loss of union power, since this legislation constrains unions' financial resources, reduces their organizing activity and ultimately impairs their effectiveness and strength (Ellwood & Fine, 1987; Matsa, 2010). Thus, we consider states which enact RTW

legislation as less union-friendly. Our investigation echoes the current hot debate over RTW laws due to recent changes in the U.S. political landscape.[12]

We test whether unionized companies located in states without RTW laws exhibit higher audit fees due to increased union power. We divide our sample into two groups (see Table 8), based on the effective year of RTW laws at state level, available through the National Right to Work Committee. We observe that the coefficient of *D_UNION* is statistically significant at 1% (column 2, β=0.151, t-stat=2.74) for states without RTW laws and significant at 10% (column 1, β=0.144, t-stat=1.65) for those states with, supporting the notion that unionized companies face audit fee premiums in states with higher union power. We also test for homogeneity in the pairwise estimated coefficients (using a Wald test, column 3 in Table 8) and the difference in coefficients of *D_UNION* is statistically significant at 1% across RTW and non-RTW states. Thus, we demonstrate that auditors achieve higher fees in non-RTW states.

[Insert Table 8 here]

5.2 Labor unions and the Democratic Party

Since Franklin Roosevelt, the Democrat party has traditionally been considered supportive to labor, mainly by supporting labor-friendly legislation and policies. As recently as 2008, unions were responsible for $75 million in political donations, with 92% going to the Democrats (McGinty & Mullins, 2012). In 2009, the Democrats introduced the Employee Free

[12] According to the National Right to Work Committee, four states have voted for RTW laws since 2012. These are: Indiana (February 01, 2012), Michigan (March 08, 2013), Wisconsin (March 09, 2015), and West Virginia (February 12, 2016). Unions campaigned to make RTW laws unconstitutional (Shikha, 2012); in fact, as of June 2016, 11 unions had filed lawsuits against the passage of RTW legislation in West Virginia (Kabler, 2016). Interestingly, Josh Sword, secretary treasurer of the West Virginia AFLCIO, stated: "First and foremost, it's unconstitutional because it's an illegal taking of property without due process". The principal argument behind the criticism that this legislation is unconstitutional lies in the Fifth Amendment's provision that private property cannot be taken for public use unless compensation is paid.

Choice Act (EFCA), which favors labor unions, to both houses of the Congress.[13] Strengthening workers' rights still remains a hot topic on the Democrat agenda, as Bernie Sanders, a candidate for the leadership of the Democratic Party in 2016, introduced the Workplace Democracy Action legislation to the U.S. Senate in 2015 (http://www.sanders.senate.gov). In contrast, Republicans tend to be against labor unionization. Indicatively, in a case that attracted massive media attention, Republican politicians and conservative lobby groups organized a very successful public campaign against unionization at Volkswagen in Chattanooga, Tennessee (Mueller & Stegmaier, 2017). Therefore, unions tend to have increased power in states/counties influenced by Democrats (Marciukaityte, 2015). Apart from legislation, politicians can directly influence labor issues since Congress confirms the board members to the National Labor Relations Board (NLRB), which is responsible for the investigation of unfair labor practices.

To test our prediction, we obtain data on the outcome of presidential elections at both state and county levels, and divide our sample into states/counties where Democrats (Republicans) won the most votes in the presidential elections of 2000, 2004, 2008, and 2012 (http://uselectionatlas.org/). The results of the multivariate analyses are presented in Table 9, as well as the homogeneity in the pairwise estimated coefficients across models (using a Wald test, columns 3 and 6). The coefficient of *D_UNION* is statistically significant at 1% across samples for Democrats winning the most presidential votes at either state (column 1, β=0.186, t-stat=3.55) or county level (column 4, β=0.154, t-stat=3.07). In contrast, the coefficients of *D_UNION* are statistically insignificant in states where Republicans won, though significant at 10% in counties where Republicans won. Our results indicate that unionized companies are

[13] The EFCA would provide employees with the right to sign "union authorization cards" instead of voting for or against union representation in a secret ballot. According to the The National Right to Work Committee (2009), the passage of the EFCA would give union officials the upper hand and, in turn, impair their incentives to ensure a speedy and mutually-beneficial contract. However, the Democrats could not get enough votes together to defeat a Republican filibuster.

charged with higher fees in states/counties with greater union power. Testing for homogeneity in the pairwise estimated coefficients, we observe that the difference in coefficients of *D_UNION* is statistically significant at 1% across the subsamples of dominance by Democrats versus Republicans, at both state and county levels.

[Insert Table 9 here]

5.3 Employee share ownership

Employee participation in ownership is expected to bring an interest alignment between employees and other shareholders and a consequent reduction in information asymmetries, as well as bargaining and conflict costs (Richter & Schrader, 2017), and is expected to weaken employee commitment to trade unionism (Poole & Jenkins, 1990). Thus, auditors' risk assessments are expected to reflect the lower complexity and, consequently, reduced risk related to corporate structures where employees possess an ownership stake.

We derive information on employee share ownership from Form 5500 files which represent the annual report of employee benefit plans, available through the Department of Labor's (*DoL*) research files (https://www.dol.gov/ebsa). We aggregate the market value of the equity holdings of each firm in a given year with at least one of the following employee ownership vehicles: employee stock ownership plans (ESOP); 401(k) plans that allow an investment in employer stock as an option; deferred profit-sharing plans in which part of the profit-sharing contribution is invested in employer stock; and employer-stock bonus plans (Bova, et al., 2015). We measure non-executive employee share ownership (*ESO*) as the aforementioned aggregated equity holdings over total shares outstanding for the firm in a given year, similar to other studies (Richter & Schrader, 2017).

The results for the impact of *ESO* on audit fees are reported in Table 10, separated into unionized firms and non-unionized firms (columns 1 and 2 respectively), and the full sample

(see columns 3 and 4). Regression models are significant with explanatory powers close to 80%. The coefficient of *ESO* is negative and statistically significant at 5% (column 1, β=-0.331, t-stat=-2.11), indicating a fee discount for unionized firms with employee ownership. However, this result is not evident for non-unionized firms, as the coefficient of *ESO* lacks statistical significance (see column 2). We further consider the full sample and we find that the coefficient of *ESO* is negative and significant at 5% (column 3, β=-0.305, t-stat=-2.13). This holds when controlling for *D_UNION* (column 4), which interestingly drops to a significance level of 5%. The remaining coefficients have the predicted sign, while in all models the mean VIFs are less than 1.56, implying no multicollinearity. Overall, the results indicate that employee ownership mitigates monitoring costs, on the basis of a closer alignment of employee and shareholder interests, and that the power of unionism on audit pricing is mitigated.

[Insert Table 10 here]

6 Sensitivity testing

We conduct sensitivity tests for alternative definitions of unionization and verify that the audit fee premium is persistent (6.1). We further account for specification issues related to variable omission (6.2). Finally, we test our inferences by employing propensity score matched and entropy balance matching approaches to mitigate concerns that our results could be prone to selection bias (6.3); while we alleviate endogeneity concerns by adopting the Heckman (1979) two-stage procedure and instrumental variables (IV) approaches (6.4).

6.1 Alternative definition of unionization

We measure unionization based on the percentage of unionized employees (*PCT_UNION*) as derived from company filings which, however, is underreported when compared to the existence of organized labor (*D_UNION*). We additionally include the existence of a union-related risk indication in the company filings (*UNION_RISK*). This

variable is available for the years 2005 onwards, due to a SEC mandate to disclose Item 1A Risk Factors.[14] Thus, we sensitivity test both variables rather than consider them as our main measures of unionization for reasons related to a material drop in observations. We further follow Cheng (2017) and estimate a comprehensive measure of the overall influence of organized labor (*CB*), calculated as the first principal component of the percentage of unionized employees (*PCT_UNION*), the coverage dummy (*D_UNION*), and the union-related risk dummy (*UNION_RISK*). Running the models again, the magnitude of all coefficients of alternative unionization proxies is positive, with *CB* and *UNION_RISK* being statistically significant at 1% and *PCT_UNION* being statistically significant at 10% (results presented in Table S 5 of the online Supplementary Material).

6.2 Variable omission

We test for sensitivity with a battery of variables that have been found or suggested (explicitly or implicitly) to influence audit pricing but are not included in our full model due to data and/or specification reasons. We test the natural logarithm of non-audit fees (*NAF*) and the ratio of non-audit fees to total fees (*FEE*) (Cheng, et al., 2017). *NAF* is significant with a positive sign, while *FEE* is significant with a negative sign. We also control for membership of the Fortune 500 index (*D_FORRK*) (Kedia & Rajgopal, 2011), and research and development to turnover (*RD*) (Gul & Goodwin, 2010); with the former being positive and significant at 10% and the latter negative and insignificant. The incorporation of all the above variables (tabulated in Table S 7 of the online Supplementary Material) does not change our inferences.

[14] Similar to Cheng (2017), we parse union-related risk expressions included in Item 1A (Risk Factors), as firms report idiosyncratic factors (e.g., labor relations, labor union activity) under this item. *UNION_RISK* is set to 1 if the company discloses risks related to: 1) union presence, 2) union organizing activity, 3) expiry of bargaining agreements (either in current or next year), 4) work stoppages or 5) negative impact on firm performance and/or profitability, and 0 otherwise. We identify 728 instances of union-related risk.

We control for the auditor's assessment of internal controls efficiency (Gul & Goodwin, 2010) and use a dummy, obtained from Audit Analytics, indicating efficient/inefficient internal controls (*ICE*). We find that the inefficiency of internal controls significantly increases audit fees (at the 1% significance level), probably due to the increased audit risk and/or because auditors undertake some extra relevant tasks; while the coefficient of *D_UNION* remains significant at 1%. We further control for increased complexity in reporting (*DISC*), using an indicator equal to 1 when a firm reports discontinued operations and extraordinary items, and 0 otherwise (Ghosh & Tang, 2015). Again, the coefficient of *DISC* is positive and significant at the 1% level, while *D_UNION* remains significant at 1% (reported in Table S 7 of the online Supplementary Material).

We also test for additional demographic and geographic controls (results can be found in Table S 8 of the online Supplementary Material). We account for religiosity (*REL*), conceptualized as the degree of adherence to religious norms in the geographical area where a firm's headquarters is located (Leventis, et al., 2018), as this is found to be negatively associated with audit fees in the U.S. Influenced by recent studies, we control for state judicial quality, since the quality and integrity of the judicial system may influence managerial and auditor decisions (Kedia & Rajgopal, 2011). We operationalize state judicial quality (*JUD_QUAL*) using the overall state ranking reported in the 2001 State Liabilities Rankings Study, which was conducted for the U.S. Chamber of Commerce (2002) (see http://www.uschamber.com). Neither coefficient of the aforementioned variables is statistically significant, while our inferences remain unchanged.

We control for whether the states where corporate headquarters are located have implemented the education requirement of the 150-hour rule (*D_EDU150*), since it has been suggested to influence audit price determination (Allen & Woodland, 2010). Indeed, *D_EDU150* is positive and significant at the 1% level, while *D_UNION* remains significant at

1%. Drawing upon the Division of Labor Force Statistics (2014), the propensity to become unionized is a function of gender, race and age. Accordingly, black male workers between the ages of 45 and 65 are more unionized when compared to white female workers of younger ages. We control, at the county level, for: the percentage of the population who are black (*BLACK*); the percentage of the population who are men (*MALE*); and the percentage of the population between the ages of 45 and 64 (*POP45_64*). Again, our inferences remain unchanged.

Prior studies associate a company's location with audit fee premiums (discount) if located in an urban (rural) area (Clatworthy & Peel, 2007). We regard corporate headquarters as the main place of managerial decision making (see also Coval & Moskowitz, 2001) and create indicator variables for headquarters located in urban or urban agglomerate areas (*URB*) and rural areas (*RUR*). Following Francis, Hasan, John, and Waisman (2016), we operationalize *URB* as a corporate location within one of the ten largest Consolidated Metropolitan Statistical Areas (CMSA) of the United States (http://www.uschamber.com),[15] or in one of the Metropolitan Statistical Areas (MSA) with at least 1 million residents. We operationalize *RUR* as a corporate location at least 250 miles away from the nearest urban area (Duranton & Puga, 2004; Francis, et al., 2016).[16] *D_UNION* remains significant at 1%, while the coefficients *PUR* and *URB* lack statistical significance.

As additional robustness checks, we include the quadratic transformation of firm size (*SQTA*), to account for potential non-linearities of audit fees (Cullinan, Du, & Zheng, 2016).

[15] We consider as CMSAs the following: New York City, Los Angeles, Chicago, Dallas, Houston, Philadelphia, Washington, Miami, Atlanta, and Boston.

[16] We classify as "urban" any Metropolitan Statistical Area (MSA), as defined by the U.S. Census, with at least 1 million residents. Previous literature on urban economics provides ample evidence that the distance to urban centers significantly differentiates corporations (Duranton & Puga, 2004) and that the 250 miles criterion is a valid measure of this differentiation in the U.S. (Francis, et al., 2016). Distances are calculated using the methodology described in footnote 6.

We then repeat our analyses after excluding firm-years with an auditor change, to rule out competing arguments including audit fee discounting in the first year of engagement (Ghosh & Lustgarten, 2006). None of these tests alters our inferences (as indicated in Table S 9 of the online Supplementary Material).

Following Srinidhi, et al. (2014), we substitute *GINDEX* in the model with all the components of this index individually, as well as creating a variable representing the first principal components (*GOV_PCA*) instead of the index form. We change the cut-off point for concentrated ownership to 25% (*CONC_OWN_25*) (Desender, et al., 2013) and further distinguish between domestic-concentrated (*DOM_CONC_OWN*) and foreign-concentrated (*FOR_CONC_OWN*) ownership types, based on the shareholder's country of origin/headquarters. Our results indicate that concentrated ownership (*CONC_OWN_25*) and domestic-concentrated ownership (*DOM_CONC_OWN_25*) are both statistically significant and negatively associated with audit fees, while the coefficient *D_UNION* remains significant at 1% (tabulated in Table S 10 of the online Supplementary Material).

Finally, similar to prior studies (Reichelt & Wang, 2010), while we define auditor expertise as the audit firm with the largest audit fee market share in a two-digit SIC industry, we also sensitivity test for alternative definitions. Thus, we run the models again and include specialization defined as when an audit firm has a fee market share of at least 25% (30%) in a two-digit SIC industry (e.g., Numan & Willekens, 2012). We augment our testing by creating indicators for city-level specialization, based on an audit office having the largest audit fee market share in a combination of two-digit SIC industry and MSA (*LEAD_MSA*) (Reichelt & Wang, 2010), or in a two-digit SIC industry and county combination (*LEAD_CNT*). All measures of auditor specialization are highly significant and positively associated with audit fees, whilst the coefficient of *D_UNION* remains unchanged (as reported in Table S 11 of the online Supplementary Material).

6.3 Statistical matching techniques

In line with relevant studies (Bryan, 2017; Chapman, Miller, & White, 2019; Cheng, et al., 2017) and to ensure that the results are robust to alternative matching methodologies, we implement propensity-score (PSM) and entropy-balancing matching (EBM) techniques. In both techniques we use the same set of observable firm characteristics (covariates). Following Cheng (2017), we employ the following covariates: *LTA*; *MB*; *TANGIBILITY* of the firm expressed as net PPE scaled by total assets; *LEV*; *ZSCORE*; *ROA*; the natural logarithm of market capitalization (*MKVAL*); and the absolute value of discretionary accruals (*ABS_KMJRDA*) (Kothari, et al., 2005). We additionally include: total cash and investment securities deflated by total assets (*CASH*); inventories to total assets (*INVENTORY*), since unionized firms strategically adjust reserves (Klasa, et al., 2009) and inventory levels (Matsa, 2010); and *AGE*, as union density is higher in older firms (Hirsch, 2004). Finally, we account for *MALE*, *BLACK* and *POP45_64*, all at a county level, as described in section 6.2.

First, we employ PSM as it is capable of moderating the differences between the treatment (unionized) and control (non-unionized) groups (Shipman, Swanquist, & Whited, 2017). Initially, we run a probit model to predict the probability that the firm is unionized (propensity score), conditional on the aforementioned covariates. Next, we employ a nearest-neighbor matching approach without replacement and with a caliper constraint (δ=0.1) (Shipman, et al., 2017). We then match firms that are unionized and non-unionized, based on closeness to the predicted value from the first step and with the restriction of matching pairs belonging to the same year and two-digit SIC industry. This process yields 275 matching pairs. Second, we implement the EBM technique due to its ability to correct distribution biases between the treatment and control groups, via achieving equality between the post-weighting means and variances of the two groups (Chapman, et al., 2019). Another advantage of the EBM is that it enables us to preserve the same sample size as in baseline regressions. In untabulated

results, we perform our analysis on the samples subsequent to PSM and EBM matching (see Tables S 14 and S 16, respectively, in the online Supplementary Material). We observe that the coefficient of *D_UNION* remains positive and statistically significant at 1%.

6.4 Mitigating endogeneity concerns

In order to mitigate concerns regarding the potential endogeneity of unionization and of unions' self-selection in relation to organizing in firms, we adopt the Heckman (1979) two-stage procedure and employ an instrumental variables (IV) approach. In line with previous studies (e.g., Chen, et al., 2012), we instrument *D_UNION* with the fraction of female workers in a firm's CIC industry (in logarithmic form – *FEMALE*).[17] On the one hand, we anticipate a negative relationship with *FEMALE* since women's propensity to join unions is lower and, thus, industries with a high concentration of female employees tend to be less unionized (Hirsch, 1980). On the other hand, there is no obvious reason why *FEMALE* would directly affect audit pricing. In untabulated results, we observe that the coefficient of *D_UNION* remains positive and statistically significant at 1% across both estimation methods (see Table S 17 of the online Supplementary Material), while the coefficient of *FEMALE* attains a significant negative coefficient (at 1%). This indicates that it is a strong instrument, as the inverse Mills ratio is significant and the F-statistic lies above the threshold of 10 (Staiger & Stock, 1997).

7 Discussion

In this study, we examine the effects of unionization on monitoring costs, which constitute important elements of corporate operations and firm value. By doing so, we aim to

[17] The NBER CPS Merged Outgoing Rotation Groups File data are available in Census Industry Classification (CIC) codes and provide estimates on a yearly basis (http://www.nber.org/morg/annual/). We follow the methodology described in Section 3.2 and transform each firm's primary CIC into Standard Industrial Classification (SIC) codes.

fill a significant gap in management literature. Though the literature has provided rich insights into the impact of unions on core corporate matters (including efficiency, productivity, performance, risk and strategic decision-making), there is limited and contradicting evidence on the relationship between unionization and monitoring costs.

We extend the investigation into the conflicting nature of union aims and the interests of principals and agents. Unions are described as primarily concerned with promoting claims to better wages, hours and working conditions. However, such pressures contradict shareholder and manager interests, which are aimed at increasing shareholder value and reducing the cost of capital. We argue that this structural antithesis increases the complexities of contractual relations and information asymmetry and makes unionized contexts financially more opaque. We empirically demonstrate that monitoring costs significantly increase due to unionized contexts being more risky and, therefore, additional time and effort is devoted to monitoring purposes. Thus, we support Bryan (2017) and Fung, et al. (2017) on the complementary role of unionization as regards monitoring costs, contrary to Cheng, et al. (2017).

We also show that monitoring costs are significantly higher in states with no enactment of RTW legislation and in locales dominated by Democrats. Legislation and dominant political ideologies supportive to unionization are considered to be factors which facilitate the role of the unions, exacerbating contradictions and corporate contractual complexities. Thus, in geographical areas where legislation and dominant political ideologies are supportive to unionization, monitoring costs increase.

We further demonstrate that in unionized contexts, which are characterized by inherently conflicting features, employee participation in corporate ownership operates as an alignment mechanism; this, to an extent, alleviates disparities between employee claims and other shareholder interests, and reduces the perceived conflict inherent in unionization.

Employee participation in ownership reduces contractual relationship complexities, information asymmetry and financial opacity, since employees start developing investing attitudes. Hence, unionized contexts where employees participate in ownership are assessed as less risky and, thus, less time and effort are needed for monitoring purposes.

The implications of our findings are important for employees, unions, shareholders and managers. By providing insights into the positive association between organized labor and monitoring costs, unions should take into consideration that their role incurs additional costs for the firm; since their mere presence necessitates more thorough, and consequently more costly, monitoring activities. Shareholders and managers should consider motivating employees to participate in ownership, since this alleviates the underlying contradictions which are inherent features of unionization, reduces a significant cost for the firm, and enhances firm value. Investors and analysts should factor into their analysis the knowledge that monitoring costs are significantly higher in unionized contexts, and particularly in unionized corporations located in areas where the legislation and dominant political ideologies are in favor of unions.

Our research opens up new paths for industrial relations research. We note that our study is restricted to the U.S. and, thus, our findings are limited to the specific geographical borders. Researchers could study the relationship between unionization and monitoring costs in other geographical environments (both European and non-Western) characterized by similarities or differences in institutional and industrial settings, unionization cultures and histories (see Hui & Chan, 2015). Such research could assist in providing widely-generalizable conclusions. Moreover, future research could alternatively employ cross-country samples to run the tests and models introduced in this study in order to facilitate the generalizability of results.

8 Appendix - Variable definitions

Variable	Definition
Panel A: Audit fees model	
Dependent variable:	
LAF	Natural logarithm of audit fees (Source: Audit Analytics).
Unionization status:	
D_UNION	1 if the company's employees are covered by a collective bargaining agreement, as reported in company filings, and 0 otherwise.
UNION_IND	Industry-level unionization, calculated as the product of the percentage of unionized employees in the industry (from the Union Membership and Coverage Database (UMCD)) with the number of company employees, over lagged total assets, as in Hilary (2006).
D_UNION_IND	1 if a company's *UNION_IND* value is greater than the two-digit SIC & year median, 0 otherwise.
Client Attributes:	
LTA	Natural logarithm of total assets (Source: Compustat).
FOREIGN	1 if the company reports income taxes from foreign operations (Source: Compustat).
OPSEG	Natural logarithm of the number of operating segments of the company (Source: Compustat).
GEOSEG	Natural logarithm of the number of geographic segments of the company (Source: Compustat).
MERGER	1 if the company reports any impact of a merger or acquisition on net income (Source: Compustat).
MB	Market to book value of equity (Source: Compustat).
AGE	Age of the company, measured as the natural logarithm of the number of years the company has been in Compustat.
LIT	1 if the company is named as a defendant in a lawsuit, 0 otherwise (Source: Audit Analytics).
ARIN_TA	Sum of accounts receivables and inventory, over total assets (Source: Compustat).
GROWTH	Change in company's sales from previous year over sales of the previous year, expressed as percentage (Source: Compustat).
LOSS	1 if the company's net income is negative, 0 otherwise (Source: Compustat).
ROA	Return on assets, measured as the ratio of income before extraordinary items over total assets (Source: Compustat).
LEV	Leverage ratio, measured as total debt over total assets (Source: Compustat).
CR	Current ratio, measured as current assets over current liabilities (Source: Compustat).
GINDEX	Board's governance strength, as in Srinidhi, et al. (2014). The index is calculated as the proportion of nonexecutive board members, plus the average number of other corporate affiliations of board members, plus an indicator for the existence of audit committee with financial expertise, plus the number of board meetings during the year, minus an indicator for CEO serving as chair of the board. Values exceeding 1 are standardized using the sample's max value (Source: Thomson Reuters Eikon).
CONC_OWN	1 if an investor has at least a 20% stake of total firm shares, 0 otherwise (Source: Thomson Reuters Eikon).
Auditor Attributes:	
LEAD_SIC	1 if the auditor is a market leader, in terms of generating the highest total revenues in an industry (two-digit SIC), 0 otherwise (Source: Audit Analytics).
AUD_CH	1 if the company changed its auditor in current year, 0 otherwise (Source: Audit Analytics).
COMP_AF	Herfindahl-Hirschman concentration index per audit market (based on auditor's revenue in the form of fees), where market is proxied using two-digit SIC-county combinations (Source: Audit Analytics).
Engagement Attributes:	
AUD_LAG	Time elapsed from the year-end until the signature date of the auditor (Source: Audit Analytics).
DEC	1 if fiscal year end is December, 0 otherwise (Source: Audit Analytics).
D_RES	1 if there is a financial statement restatement, 0 otherwise (Source: Audit Analytics).

(continued on next page)

(Table continued)

Variable	Definition
Demographic & Geographic Attributes:	
SOC_CAP	Social capital at the county level (Jha & Chen, 2015) (Source: Northeast Regional Center for Rural Development - Pennsylvania State University).
DIST_SEC	Natural logarithm of the distance between corporate headquarters and the SEC office with jurisdiction in the area, in miles.
POP	Natural logarithm of total county population (Source: U.S. Census Bureau).
LITERACY	Percentage of adults completing four years of college or higher in the county (Source: U.S. Census Bureau).
Panel B: Other independent variables for litigation risk model only	
Dependent variable:	
LIT_AUDITOR	1 if the auditor is named as a defendant in a lawsuit, 0 otherwise (Source: Audit Analytics).
Control variables:	
KMJRDA	Abnormal accruals from the modified Jones model, adjusted for performance (Kothari, et al., 2005) (Source: Compustat).
OPCF	Operating cash flow over total assets (Source: Compustat).
ZSCORE	Financial distress measurement (Altman & Hotchkiss, 2006), calculated as [0.717 *(working capital / total assets) + 0.847 *(retained earnings / total assets) + 3.107 *(earnings before interest and taxes / total assets) + 0.42 *(book value of equity / total liabilities) + 0.998 *(sales / total assets)] (Source: Compustat).
INVENTORY	Level of inventories over total assets (Source: Compustat).
REC_TA	Total trade accounts receivable over total assets (Source: Compustat).
RET	Company's 12-month stock returns for the fiscal year (Source: Compustat).
RETVOL	Variance of the company's abnormal returns during a 12-month period prior to the fiscal year end (Source: Compustat).
UNQOP	1 if the auditor issues an unqualified opinion without any additional language, 0 otherwise (Source: Compustat).
STENURE	1 if the auditor-client relationship holds for three years or less, 0 otherwise (Source: Audit Analytics).
TECH	1 if the company's 4-digit SIC code is in the 2830s, 3570s, 7370s, and 8730s, 0 otherwise (Source: Compustat).

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Table 1 Sample selection.

Sample selection stages	Number of firms	Number of firm years
Firms with common support across Audit Analytics, Compustat and Thomson Reuters Eikon databases (2003 - 2013).	6,043	49,386
Delete: Observations of foreign firms.	603	5,099
Delete: Observations with lack of audit fee control variables for our main model (1) and employee figures.	1,910	19,625
Delete: Firms without ownership structure and corporate governance data in Thomson Reuters Eikon.	2,764	19,772
Delete: Firms belonging to utilities (two-digit SIC 49) and financial (two-digit SIC 60-69) sectors.	85	505
Delete: Observations with lack of union-related expressions in 10-K variant filings.	157	1,425
Delete: Observations of firms audited by non-BIG4 audit firms.	8	50
Final sample.	**516**	**2,910**

Table 2: Descriptive statistics of unionized and non-unionized firms.

Variable	Entire Sample (N = 2,910)					Unionized firms (N = 1,755)					Non-Unionized firms (N = 1,155)					Mean diff.
	25th	Mean	Median	75th	StDev	25th	Mean	Median	75th	StDev	25th	Mean	Median	75th	StDev	
AF ($mil)	1.706	4.905	3.136	5.559	5.501	2.465	6.228	4.237	7.028	6.116	1.081	2.894	1.930	3.383	3.565	
LAF	14.35	14.968	14.959	15.53	0.92	14.72	15.284	15.259	15.77	0.832	13.89	14.489	14.473	15.03	0.836	-0.795***
D_UNION	0	0.603	1	1	0.489	1	1	1	1	0	0	0	0	0	0	-1
D_UNION_IND	0	0.547	1	1	0.498	0	0.619	1	1	0.486	0	0.438	0	1	0.496	-0.181***
UNION_IND	0	0.003	0.002	0.004	0.006	0.001	0.004	0.002	0.005	0.005	0	0.002	0.001	0.002	0.006	-0.002***
GINDEX	1.179	1.549	1.372	2.08	0.559	1.188	1.521	1.348	2.036	0.541	1.169	1.593	1.44	2.121	0.582	0.072***
CONC_OWN	0	0.069	0	0	0.254	0	0.076	0	0	0.265	0	0.059	0	0	0.235	-0.017*
LTA	7.766	8.581	8.443	9.257	1.144	8.147	8.928	8.763	9.622	1.052	7.371	8.055	7.864	8.69	1.077	-0.873***
FOREIGN	1	0.793	1	1	0.405	1	0.821	1	1	0.383	1	0.751	1	1	0.433	-0.070***
OPSEG	0	0.481	0	1.099	0.691	0	0.581	0	1.386	0.734	0	0.33	0	0.693	0.588	-0.250***
GEOSEG	0	0.61	0	1.386	0.683	0	0.605	0	1.386	0.693	0	0.618	0	1.386	0.666	0.013
MERGER	0	0.223	0	0	0.416	0	0.236	0	0	0.425	0	0.203	0	0	0.402	-0.033**
MB	1.707	3.365	2.723	4.371	6.538	1.618	3.039	2.469	3.829	5.683	1.976	3.86	3.252	5.241	7.631	0.821***
AGE	2.708	3.191	3.135	3.85	0.672	2.833	3.359	3.584	3.989	0.689	2.565	2.935	2.89	3.296	0.554	-0.424***
LIT	0	0.349	0	1	0.477	0	0.337	0	1	0.473	0	0.368	0	1	0.482	0.031*
ARIN_TA	0.112	0.218	0.201	0.306	0.132	0.134	0.232	0.229	0.317	0.126	0.089	0.196	0.152	0.282	0.139	-0.036***
GROWTH	-0.127	-0.055	-0.063	0.002	0.166	-0.116	-0.042	-0.052	0.013	0.162	-0.147	-0.075	-0.079	-0.016	0.17	-0.033***
LOSS	0	0.12	0	0	0.325	0	0.108	0	0	0.31	0	0.139	0	0	0.347	0.032**
ROA	0.031	0.059	0.063	0.1	0.087	0.029	0.052	0.055	0.085	0.067	0.037	0.069	0.081	0.125	0.11	0.016***
LEV	0.114	0.242	0.223	0.332	0.184	0.164	0.274	0.251	0.353	0.168	0.016	0.192	0.153	0.299	0.195	-0.082***
CR	1.255	2.152	1.769	2.562	1.405	1.194	1.829	1.614	2.231	0.928	1.426	2.643	2.07	3.315	1.809	0.813***
LEADER_SIC	0	0.339	0	1	0.474	0	0.351	0	1	0.477	0	0.321	0	1	0.467	-0.03*
AUD_CH	0	0.023	0	0	0.149	0	0.022	0	0	0.146	0	0.024	0	0	0.154	0.003
COMP_AF	0.93	1.497	1	1.72	1.271	0.938	1.275	1	1.293	0.853	0.921	1.834	1	2.164	1.666	0.558***
AUD_LAG	50	54.269	56	59	10.497	50	54.503	56	59	10.067	51	53.915	56	59	11.113	-0.587
DEC	0	0.666	1	1	0.472	0	0.748	1	1	0.434	0	0.54	1	1	0.499	-0.208***
D_RES	0	0.066	0	0	0.249	0	0.071	0	0	0.256	0	0.06	0	0	0.237	-0.011
SOC_CAP	-1.196	-0.593	-0.495	-0.016	0.808	-0.92	-0.464	-0.364	0.106	0.818	-1.401	-0.788	-0.787	-0.261	0.752	-0.324***
DIST_SEC	3.285	4.293	4.845	5.577	1.718	3.201	4.333	4.952	5.55	1.718	3.377	4.232	4.606	5.615	1.717	-0.101
POP	13.18	13.688	13.749	14.32	1.052	13.1	13.583	13.726	14.27	1.1	13.38	13.847	13.96	14.38	0.952	0.264***
LITERACY	0.285	0.369	0.362	0.446	0.103	0.28	0.359	0.339	0.44	0.108	0.306	0.384	0.396	0.454	0.093	0.026***
LIT_AUDITOR	0	0.007	0	0	0.083	0	0.008	0	0	0.089	0	0.005	0	0	0.072	-0.003

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(Table 2 continued)

Variable	Entire sample (N = 2,910)					Unionized firms (N = 1,755)					Non-Unionized firms (N = 1,155)					Mean diff.
	25th	Mean	Median	75th	StDev	25th	Mean	Median	75th	StDev	25th	Mean	Median	75th	StDev	
ZSCORE	1.824	2.82	2.655	3.739	1.702	1.761	2.552	2.439	3.245	1.249	1.988	3.227	3.241	4.592	2.157	0.675***
OPCF	0.069	0.1	0.102	0.142	0.088	0.065	0.091	0.092	0.122	0.067	0.081	0.114	0.124	0.172	0.111	0.024***
INVENTORY	0.019	0.103	0.079	0.157	0.101	0.035	0.109	0.095	0.162	0.09	0.004	0.094	0.047	0.14	0.116	-0.015***
REC_TA	0.057	0.114	0.104	0.161	0.074	0.069	0.122	0.114	0.168	0.07	0.041	0.101	0.084	0.145	0.079	-0.021***
RET	-0.064	0.202	0.157	0.393	0.485	-0.051	0.209	0.166	0.391	0.489	-0.09	0.193	0.139	0.394	0.479	-0.016
RETVOL	0.036	0.115	0.069	0.138	0.153	0.032	0.112	0.062	0.131	0.17	0.044	0.118	0.081	0.147	0.122	0.005
UNQOP	0	0.595	1	1	0.491	0	0.562	1	1	0.496	0	0.644	1	1	0.479	0.082***
STENURE	0	0.169	0	0	0.375	0	0.177	0	0	0.382	0	0.158	0	0	0.365	-0.02
TECH	0	0.087	0	0	0.282	0	0.023	0	0	0.151	0	0.184	0	0	0.387	0.160***

Splits the sample into unionized and non-unionized groups, based on the *D_UNION* variable at firm-level. The last column compares the differences in mean values of each variable across groups and the statistical significance of the differences reported are based on t-tests for continuous variables and chi-square tests for dummy variables. See Appendix for variable definitions.

Note: Values with asterisks *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively (2-tailed). All numbers are rounded to the third decimal place.

Table 3 Pearson correlation matrix between LAF, unionization and control variables for audit fee model (N = 2,910).

Variable	LAF	1	2	3	4	5	6	7	8	9	10	11	12	13
1. D_UNION	0.42***	1.00												
2. GINDEX	-0.02	-0.06***	1.00											
3. CONC_OWN	-0.02	0.03*	-0.10***	1.00										
4. LTA	0.71***	0.37***	-0.08***	0.02	1.00									
5. FOREIGN	0.33***	0.09***	0.05***	-0.02	0.02	1.00								
6. OPSEG	0.20***	0.18***	0.07***	0.01	0.15***	0.16***	1.00							
7. GEOSEG	0.08***	-0.01	0.13***	0.00	-0.02	0.22***	0.66***	1.00						
8. MERGER	0.07***	0.04**	0.09***	-0.01	0.05***	0.10***	0.25***	0.32***	1.00					
9. MB	-0.03	-0.06***	0.04**	0.02	-0.02	0.01	-0.08***	-0.03	0.00	1.00				
10. AGE	0.34***	0.31***	-0.02	-0.14***	0.33***	0.05***	0.13***	0.02	0.00	-0.02	1.00			
11. LIT	0.17***	-0.03*	-0.03*	-0.03*	0.23***	0.01	-0.07***	-0.10***	-0.05***	0.03*	0.02	1.00		
12. ARIN_TA	0.13***	0.13***	-0.05***	-0.06***	-0.09***	0.15***	0.03*	0.03	-0.08***	0.01	0.16***	-0.07***	1.00	
13. GROWTH	0.15***	0.10***	0.03*	-0.03*	0.10***	0.04**	-0.01	-0.08***	-0.09***	-0.10***	0.14***	0.00	0.06***	1.00
14. LOSS	-0.05***	-0.05**	0.07***	0.04**	-0.11***	-0.01	-0.04**	-0.01	0.00	-0.01	-0.07***	-0.01	-0.12***	0.03*
15. ROA	-0.05***	-0.09***	-0.03	-0.05***	-0.03*	0.06***	-0.01	0.01	-0.05***	0.02	0.02	0.01	0.12***	-0.05**
16. LEV	0.12***	0.22***	-0.07***	0.10***	0.17***	-0.17***	0.02	-0.07***	0.07***	-0.10***	0.02	-0.02	-0.14***	0.03
17. CR	-0.33***	-0.28***	0.09***	-0.02	-0.41***	0.13***	-0.05***	0.11***	0.02	0.01	-0.20***	-0.07***	-0.02	-0.08***
18. LEADER_SIC	0.11***	0.03*	-0.02	-0.03	0.09***	0.05**	0.04**	0.04**	0.03	0.01	0.02	0.00	0.00	0.02
19. AUD_CH	-0.05***	-0.01	0.00	0.01	-0.02	-0.01	-0.07***	-0.07***	-0.02	0.04**	-0.02	-0.01	-0.01	-0.05**
20. COMP_AF	-0.06***	-0.21***	0.05***	0.00	-0.08***	0.08***	-0.10***	-0.02	-0.03	0.02	-0.14***	0.04**	-0.17***	-0.04*
21. AUD_LAG	-0.01	0.03	0.00	0.03	-0.17***	-0.02	-0.06***	-0.07***	0.00	-0.06***	-0.08***	-0.04**	0.04**	-0.01
22. DEC	0.20***	0.22***	0.02	0.08***	0.16***	0.03	0.04**	-0.01	0.05***	-0.01	-0.01	-0.04**	-0.18***	0.02
23. D_RES	0.02	0.02	-0.01	0.03*	-0.02	-0.02	-0.02	-0.03	0.06***	-0.01	-0.02	0.01	0.00	-0.01
24. SOC_CAP	0.02	0.20***	-0.08***	-0.03	0.07***	-0.03*	0.01	-0.10***	-0.05***	-0.01	0.16***	0.03	0.09***	0.02
25. DIST_SEC	-0.10***	0.03	-0.04**	-0.02	-0.01	-0.05***	-0.05***	-0.12***	-0.08***	0.02	0.13***	-0.02	0.15***	-0.03
26. POP	0.08***	-0.12***	0.02	0.01	0.04**	0.06***	-0.03*	0.02	-0.06***	0.03	-0.12***	0.05***	-0.11***	-0.02
27. LITERACY	0.12***	-0.12***	0.04**	-0.06***	0.02	0.11***	0.05**	0.09***	0.05**	0.04**	-0.08***	0.08***	-0.10***	0.00

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(Table 3 continued)

Variable	14	15	16	17	18	19	20	21	22	23	24	25	26	27
14. LOSS	1.00													
15. ROA	-0.67***	1.00												
16. LEV	0.14***	-0.19***	1.00											
17. CR	0.07***	0.06***	-0.27***	1.00										
18. LEADER_SIC	0.02	0.00	-0.03	-0.06***	1.00									
19. AUD_CH	0.04*	-0.04**	-0.01	0.00	0.02	1.00								
20. COMP_AF	0.17***	-0.15***	-0.06***	0.22***	-0.03	0.04**	1.00							
21. AUD_LAG	0.07***	-0.06***	0.09***	-0.03*	0.01	0.06***	-0.02	1.00						
22. DEC	0.05***	-0.10***	0.22***	-0.12***	-0.02	0.03	-0.01	0.03*	1.00					
23. D_RES	0.05***	-0.05***	0.03	-0.01	0.02	0.02	0.01	0.15***	-0.01	1.00				
24. SOC_CAP	-0.04**	0.02	0.03*	-0.14***	0.06***	-0.01	-0.19***	-0.05**	-0.08***	-0.01	1.00			
25. DIST_SEC	-0.07***	0.10***	-0.04**	-0.02	-0.04**	0.02	-0.09***	-0.01	-0.06***	0.00	0.01	1.00		
26. POP	0.03	-0.03	-0.11***	0.04**	-0.09***	0.01	0.23***	0.03	-0.03*	-0.01	-0.46***	-0.24***	1.00	
27. LITERACY	0.03	-0.02	-0.04**	0.03	0.01	-0.02	0.22***	-0.04**	-0.05***	-0.02	0.25***	-0.43***	0.26***	1.00

Note: Values with asterisks *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively (2-tailed). See Appendix for variable definitions.

Table 4 The impact of unionization on audit fees (Dependent variable = LAF), OLS analysis

Variables	Exp sign	(1)	(2)	(3)
D_UNION	?	0.164***		
		(3.59)		
D_UNION_IND	?		0.127***	
			(4.46)	
UNION_IND	?			8.981**
				(2.00)
GINDEX	+	-0.017	-0.009	-0.012
		(-0.72)	(-0.37)	(-0.49)
CONC_OWN	-	-0.090	-0.075	-0.072
		(-1.46)	(-1.21)	(-1.15)
LTA	+	0.536***	0.564***	0.556***
		(26.73)	(28.46)	(28.02)
FOREIGN	+	0.262***	0.273***	0.280***
		(4.79)	(4.95)	(5.04)
OPSEG	+	0.009	0.012	0.021
		(0.39)	(0.52)	(0.87)
GEOSEG	+	0.050*	0.051*	0.047
		(1.73)	(1.76)	(1.64)
MERGER	+	0.006	0.009	0.006
		(0.20)	(0.33)	(0.21)
MB	+	-0.002	-0.002	-0.002
		(-1.19)	(-1.17)	(-1.29)
AGE	?	0.120***	0.115***	0.127***
		(4.11)	(3.94)	(4.31)
LIT	+	0.073***	0.063***	0.062***
		(3.53)	(2.98)	(2.92)
ARIN_TA	+	1.405***	1.348***	1.451***
		(6.82)	(6.32)	(6.76)
GROWTH	?+	0.119**	0.098*	0.119**
		(2.03)	(1.71)	(2.00)
LOSS	+	0.051	0.038	0.032
		(1.10)	(0.84)	(0.70)
ROA	-	-0.303	-0.397*	-0.395*
		(-1.30)	(-1.70)	(-1.68)
LEV	+	0.044	0.078	0.073
		(0.34)	(0.61)	(0.56)
CR	-	-0.045***	-0.041***	-0.047***
		(-3.39)	(-2.98)	(-3.48)
LEADER_SIC	+	0.097***	0.093***	0.090**
		(2.78)	(2.63)	(2.53)
AUD_CH	?-	-0.242**	-0.255**	-0.245**
		(-2.43)	(-2.51)	(-2.42)
COMP_AF	-	-0.022	-0.025	-0.027*
		(-1.40)	(-1.64)	(-1.73)
AUD_LAG	+	0.006***	0.007***	0.007***
		(4.41)	(4.73)	(4.70)
DEC	+	0.091**	0.102**	0.099**
		(2.22)	(2.51)	(2.39)
D_RES	+	0.089**	0.098**	0.092**
		(2.26)	(2.45)	(2.34)
SOC_CAP	-	-0.088***	-0.074**	-0.075**
		(-3.01)	(-2.57)	(-2.53)

(continued on next page)

(Table 4 continued) **(Dependent variable = LAF), OLS analysis**

Variables	Exp sign	(1)	(2)	(3)
DIST_SEC	?-	-0.027**	-0.030***	-0.028**
		(-2.48)	(-2.76)	(-2.55)
POP	+	0.005	0.009	0.010
		(0.26)	(0.41)	(0.46)
LITERACY	+	0.878***	0.836***	0.814***
		(3.82)	(3.66)	(3.50)
(intercept)		8.519***	8.151***	8.272***
		(24.66)	(23.24)	(23.42)
Industry & Year Effects		Included	Included	Included
R^2		0.794	0.794	0.792
Adj. R^2		0.788	0.788	0.785
Observations		2,910	2,910	2,910
Mean VIF		1.519	1.499	1.492

Note: Standard errors are clustered at firm level, with t-statistics presented in parentheses. Values with asterisks *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively (2-tailed). All numbers are rounded to the third decimal place. See Appendix for variable definitions.

Table 5 Auditor litigation differences between unionized and non-unionized firms.

Year	Unionized Companies			Non-Unionized Companies			Difference	t-value
	Auditor Lawsuits	Obs	%	Auditor Lawsuits	Obs	%		
2003	0	60	0.00%	0	45	0.00%	0.00%	-
2004	2	85	2.35%	0	54	0.00%	-2.35%	(-1.13)
2005	1	111	0.90%	0	64	0.00%	-0.90%	(-0.76)
2006	4	121	3.31%	2	65	3.08%	-0.23%	(-0.84)
2007	2	130	1.54%	0	73	0.00%	-1.54%	(-1.06)
2008	1	153	0.65%	1	108	0.93%	0.27%	(0.25)
2009	1	199	0.50%	0	134	0.00%	-0.50%	(-0.82)
2010	0	214	0.00%	1	154	0.65%	0.65%	(1.18)
2011	3	231	1.30%	1	158	0.63%	-0.67%	(0.64)
2012	0	238	0.00%	0	162	0.00%	0.00%	-
2013	0	213	0.00%	1	138	0.72%	0.72%	(1.24)
Total	**14**	**1,755**	**0.80%**	**6**	**1,155**	**0.52%**	**-0.28%**	**(-0.89)**

Table 6 Auditor litigation as an explanation for variations in audit fees between unionized and non-unionized firms (Dependent variable = LIT_AUDITOR), probit analysis.

Variables	(1)	(2)	(3)
D_UNION	-0.168	-0.221	-0.232
	(-0.81)	(-1.04)	(-0.95)
GINDEX	0.274*	0.304*	0.372**
	(1.81)	(1.95)	(2.48)
CONC_OWN	0.639**	0.691***	1.123**
	(2.55)	(2.65)	(2.53)
LTA	0.455***	0.502***	0.559***
	(4.29)	(4.43)	(4.23)
KMJRDA	0.001	0.359	-1.927
	(0.00)	(0.18)	(-0.72)
GROWTH	-0.311	-0.400	-0.168
	(-0.57)	(-0.71)	(-0.28)
ZSCORE	-0.128***	-0.122***	-0.176***
	(-3.56)	(-3.58)	(-4.42)
OPCF	2.669	1.853	1.416
	(1.48)	(1.13)	(0.92)
INVENTORY	0.071	0.163	3.918**
	(0.07)	(0.15)	(2.41)
REC_TA	4.279***	4.378***	7.757***
	(3.48)	(3.30)	(4.01)
LOSS	0.022	-0.053	-0.207
	(0.06)	(-0.14)	(-0.48)
RET	-0.164	-0.083	-0.002
	(-0.82)	(-0.44)	(-0.01)
RETVOL	0.585	0.919**	0.802*
	(1.42)	(2.03)	(1.81)
AUD_LAG	0.017***	0.016***	0.017***
	(3.46)	(2.93)	(3.10)
UNQOP	-0.226	-0.020	0.277
	(-1.43)	(-0.11)	(1.28)
STENURE	0.404**	0.391*	0.492*
	(2.13)	(1.91)	(1.84)
TECH	0.066	0.112	1.105*
	(0.19)	(0.32)	(1.77)
SOC_CAP	-0.064	-0.135	-0.331*
	(-0.47)	(-0.93)	(-1.65)
DIST_SEC	0.016	0.002	-0.015
	(0.21)	(0.02)	(-0.20)
POP	-0.119	-0.161	-0.392***
	(-1.24)	(-1.64)	(-3.04)
LITERACY	0.182	0.692	-0.385
	(0.15)	(0.58)	(-0.28)
(intercept)	-7.124***	-7.550***	-4.970***
	(-4.21)	(-4.39)	(-2.79)
Industry Effects			Included
Year effects		Included	Included
Pseudo R^2	0.232	0.271	0.361
Observations	2,910	2,405	1,196
Mean VIF	1.354	1.358	1.392

Note: Standard errors are clustered at firm level, with z-statistics presented in parentheses. Values with asterisks *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively (2-tailed). All numbers are rounded to the third decimal place. See Appendix for variable definitions.

Table 7 Audit report lag as an explanation for variations in audit fees between unionized and non-unionized firms (Dependent variable = AUD_LAG), OLS analysis.

Variables	(1)
D_UNION	1.959***
	(2.75)
GINDEX	-0.184
	(-0.43)
CONC_OWN	0.669
	(0.54)
LTA	-1.792***
	(-5.42)
KMJRDA	7.602**
	(1.97)
UNQOP	-0.144
	(-0.30)
ROA	-8.659**
	(-2.58)
MB	-0.080**
	(-2.47)
LEV	5.631***
	(3.48)
AGE	-0.347
	(-0.70)
FOREIGN	-0.239
	(-0.32)
MERGER	1.243***
	(2.60)
AUD_CH	1.924
	(0.91)
DEC	0.986
	(1.33)
SOC_CAP	-0.901**
	(-2.00)
DIST_SEC	0.020
	(0.10)
POP	0.060
	(0.19)
LITERACY	1.335
	(0.41)
(intercept)	55.676***
	(9.14)
Industry & Year Effects	Included
R^2	0.229
Adj. R^2	0.207
Observations	2,910
Mean VIF	1.232

Note: Standard errors are clustered at firm level, with t-statistics presented in parentheses. Values with asterisks *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively (2-tailed). All numbers are rounded to the third decimal place. See Appendix for variable definitions.

Table 8 Unionization and audit fees in states with/without Right-to-Work laws (Dependent variable = LAF), OLS analysis.

Variables	Exp sign	(1)	(2)	(3)
		RTW States	Non-RTW States	Diff coef
D_UNION	?	0.144*	0.151***	-0.007***
		(1.65)	(2.74)	(10.908)
GINDEX	+	-0.036	-0.024	-0.012
		(-0.90)	(-0.86)	(0.067)
CONC_OWN	-	0.026	-0.061	0.087
		(0.34)	(-0.78)	(0.733)
LTA	+	0.508***	0.554***	-0.046
		(13.22)	(26.32)	(1.211)
FOREIGN	+	0.116	0.327***	-0.211**
		(1.62)	(4.35)	(4.679)
OPSEG	+	0.015	0.008	0.006
		(0.39)	(0.29)	(0.022)
GEOSEG	+	0.048	0.033	0.015
		(1.16)	(0.92)	(0.079)
MERGER	+	0.051	-0.026	0.077
		(1.15)	(-0.81)	(2.243)
MB	+	-0.000	-0.001	0.001
		(-0.03)	(-0.71)	(0.073)
AGE	?	0.184***	0.087**	0.097*
		(4.08)	(2.53)	(3.198)
LIT	+	0.085***	0.074***	0.011
		(2.91)	(3.09)	(0.089)
ARIN_TA	+	1.161***	1.485***	-0.324
		(2.78)	(7.13)	(0.55)
GROWTH	?+	0.166*	0.093	0.073
		(1.89)	(1.30)	(0.453)
LOSS	+	0.055	0.059	-0.004
		(0.66)	(1.11)	(0.002)
ROA	-	-0.298	-0.391	0.093
		(-0.87)	(-1.57)	(0.052)
LEV	+	0.167	0.047	0.12
		(0.88)	(0.31)	(0.268)
CR	-	0.006	-0.054***	0.06**
		(0.21)	(-3.57)	(4.202)
LEADER_SIC	+	0.096*	0.105***	-0.009
		(1.68)	(2.70)	(0.018)
AUD_CH	?-	0.168**	-0.427***	0.595***
		(2.01)	(-3.23)	(15.286)
COMP_AF	-	0.088*	-0.028*	0.117**
		(1.97)	(-1.73)	(6.562)
AUD_LAG	+	0.006***	0.007***	-0.001
		(3.71)	(4.53)	(0.291)
DEC	+	0.138*	0.040	0.097
		(1.87)	(0.87)	(1.413)
D_RES	+	-0.013	0.112**	-0.125*
		(-0.26)	(2.33)	(3.471)
SOC_CAP	-	0.014	-0.068**	0.082
		(0.23)	(-2.01)	(1.624)
DIST_SEC	?-	-0.074***	-0.039***	-0.035
		(-3.23)	(-3.25)	(1.984)

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(Table 8 continued) **(Dependent variable = LAF), OLS analysis**

Variables	Exp sign	(1) RTW States	(2) Non-RTW States	(3) Diff coef
POP	+	0.009	0.036	-0.026
		(0.29)	(1.51)	(0.446)
LITERACY	+	0.715*	0.763***	-0.048
		(1.94)	(3.11)	(0.013)
(intercept)		8.702***	8.086***	0.828
		(17.19)	(19.49)	(1.249)
Industry & Year Effects		Included	Included	
R^2		0.856	0.812	
Adj. R^2		0.841	0.804	
Observations		888	2,022	
Mean VIF		1.605	1.553	

Note: Standard errors are clustered at firm level, with t-statistics presented in parentheses. Values with asterisks *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively (2-tailed). All numbers are rounded to the third decimal place. The last column reports the t-statistics for Wald tests used to compare the difference in coefficients between regression results. See Appendix for variable definitions.

Table 9 Unionization and audit fees in states (counties) where Democrats (Republicans) won in recent presidential elections (Dependent variable = LAF), OLS analysis.

Variables	Exp sign	(1)	(2)	(3)	(4)	(5)	(6)
		State-Level			County-Level		
		Democrats	Republicans	Diff coef	Democrats	Republicans	Diff coef
D_UNION	?	0.186***	0.115	0.071***	0.154***	0.150*	0.004***
		(3.55)	(1.61)	(13.826)	(3.07)	(1.72)	(12.077)
GINDEX	+	-0.022	-0.004	-0.018	-0.030	0.012	-0.042
		(-0.69)	(-0.12)	(0.186)	(-1.14)	(0.24)	(0.682)
CONC_OWN	-	-0.109	0.008	-0.118	-0.116	0.161	-0.277**
		(-1.45)	(0.10)	(1.352)	(-1.63)	(1.33)	(4.372)
LTA	+	0.536***	0.542***	-0.006	0.546***	0.503***	0.043
		(24.15)	(16.79)	(0.031)	(26.22)	(12.01)	(1.008)
FOREIGN	+	0.265***	0.212***	0.054	0.270***	0.213*	0.058
		(3.81)	(3.37)	(0.411)	(4.53)	(1.75)	(0.211)
OPSEG	+	0.051*	-0.029	0.08	0.010	0.007	0.003
		(1.76)	(-0.65)	(2.385)	(0.39)	(0.12)	(0.003)
GEOSEG	+	0.025	0.067	-0.042	0.062*	-0.011	0.074
		(0.70)	(1.38)	(0.533)	(1.90)	(-0.18)	(1.241)
MERGER	+	0.000	0.026	-0.026	-0.026	0.121**	-0.147**
		(0.01)	(0.48)	(0.187)	(-0.86)	(2.21)	(6.434)
MB	+	-0.002	-0.006	0.004	-0.002	-0.004	0.002
		(-1.45)	(-0.92)	(0.355)	(-1.27)	(-0.74)	(0.171)
AGE	?	0.097***	0.130***	-0.033	0.114***	0.166**	-0.053
		(2.79)	(3.38)	(0.598)	(3.54)	(2.44)	(0.567)
LIT	+	0.062**	0.109***	-0.047	0.081***	0.041	0.04
		(2.54)	(3.65)	(1.739)	(3.77)	(1.05)	(0.983)
ARIN_TA	+	1.514***	0.943**	0.571	1.467***	1.047***	0.42
		(7.32)	(2.46)	(2.147)	(6.89)	(2.75)	(1.142)
GROWTH	?+	0.083	0.167**	-0.084	0.125*	0.193	-0.069
		(1.05)	(2.01)	(0.622)	(1.82)	(1.38)	(0.208)
LOSS	+	0.050	0.014	0.036	0.045	-0.014	0.059
		(0.89)	(0.20)	(0.19)	(0.86)	(-0.16)	(0.381)
ROA	-	-0.373	0.004	-0.376	-0.349	-0.633*	0.284
		(-1.37)	(0.01)	(1.045)	(-1.35)	(-1.70)	(0.438)
LEV	+	-0.064	0.370*	-0.434**	0.130	-0.030	0.159
		(-0.44)	(1.94)	(4.445)	(0.91)	(-0.13)	(0.417)
CR	-	-0.012	-0.081***	0.068***	-0.041**	-0.037	-0.004
		(-0.84)	(-3.75)	(8.878)	(-2.46)	(-1.51)	(0.024)
LEADER_SIC	+	0.074*	0.110**	-0.036	0.103***	0.076	0.027
		(1.82)	(2.22)	(0.441)	(2.66)	(1.20)	(0.163)
AUD_CH	?-	-0.145	-0.508**	0.363	-0.412***	0.022	-0.434**
		(-1.32)	(-2.29)	(2.279)	(-3.11)	(0.17)	(5.819)
COMP_AF	-	-0.018	-0.020	0.002	-0.038**	0.046	-0.084
		(-0.91)	(-1.03)	(0.007)	(-2.31)	(0.81)	(2.383)
AUD_LAG	+	0.006***	0.005***	0	0.006***	0.007***	-0.001
		(3.10)	(3.05)	(0.041)	(3.87)	(3.14)	(0.064)
DEC	+	0.077*	0.059	0.018	0.085*	0.174**	-0.089
		(1.67)	(1.02)	(0.086)	(1.81)	(2.00)	(0.927)
D_RES	+	0.057	0.172***	-0.115	0.095**	0.080	0.015
		(1.25)	(2.59)	(2.127)	(2.15)	(1.07)	(0.035)
SOC_CAP	-	-0.100***	-0.044	-0.057	-0.082**	-0.178**	0.097
		(-2.94)	(-0.95)	(1.325)	(-2.48)	(-2.48)	(1.669)

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(Table 9 continued) **(Dependent variable = LAF), OLS analysis**

Variables	Exp sign	(1)	(2)	(3)	(4)	(5)	(6)
		State-Level			County-Level		
		Democrats	Republicans	Diff coef	Democrats	Republicans	Diff coef
DIST_SEC	?-	-0.026**	-0.045**	0.019	-0.030**	0.006	-0.036
		(-2.05)	(-2.56)	(0.98)	(-2.56)	(0.20)	(1.501)
POP	+	0.005	0.024	-0.019	0.014	-0.035	0.049
		(0.20)	(0.86)	(0.36)	(0.49)	(-0.90)	(1.136)
LITERACY	+	0.955***	0.883**	0.072	0.857***	0.925**	-0.069
		(3.89)	(2.30)	(0.034)	(3.23)	(2.10)	(0.021)
(intercept)		8.616***	8.412***	1.015**	8.420***	8.711***	-0.83
		(20.66)	(17.85)	(3.99)	(17.53)	(12.85)	(1.113)
Industry & Year Effects		Included	Included		Included	Included	
R^2		0.792	0.839		0.808	0.813	
Adj. R^2		0.782	0.824		0.8	0.789	
Observations		1,906	1,004		2,212	698	
Mean VIF		1.533	1.627		1.540	1.663	

Note: Standard errors are clustered at firm level, with t-statistics presented in parentheses. Values with asterisks *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively (2-tailed). All numbers are rounded to the third decimal place. The last column reports the t-statistics for Wald tests used to compare the difference in coefficients between regression results. See Appendix for variable definitions.

Table 10 Unionization, employee share ownership (ESO) and audit fees (Dependent variable = LAF), OLS analysis.

Variables	Exp sign	(1) Unionized	(2) Non-Unionized	(3) Full Sample	(4) Full Sample
ESO	?	-0.331**	-0.081	-0.305**	-0.290**
		(-2.11)	(-0.23)	(-2.13)	(-2.09)
D_UNION	?				0.124**
					(2.53)
GINDEX	+	-0.022	0.026	-0.012	-0.013
		(-0.69)	(0.71)	(-0.46)	(-0.49)
CONC_OWN	-	-0.135	0.063	-0.106	-0.120
		(-1.45)	(0.65)	(-1.25)	(-1.43)
LTA	+	0.588***	0.481***	0.542***	0.532***
		(20.46)	(16.54)	(24.48)	(24.36)
FOREIGN	+	0.182**	0.342***	0.290***	0.281***
		(2.25)	(4.36)	(4.58)	(4.47)
OPSEG	+	-0.001	0.005	0.011	0.004
		(-0.04)	(0.14)	(0.42)	(0.14)
GEOSEG	+	0.035	0.026	0.038	0.040
		(0.75)	(0.54)	(1.17)	(1.22)
MERGER	+	-0.048	0.039	-0.005	-0.007
		(-1.29)	(1.01)	(-0.16)	(-0.24)
MB	+	0.001	-0.007*	-0.002	-0.001
		(0.43)	(-1.80)	(-0.93)	(-0.89)
AGE	?	0.157***	0.210***	0.193***	0.185***
		(3.41)	(3.63)	(5.31)	(5.21)
LIT	+	0.053**	0.063*	0.049**	0.057***
		(2.12)	(1.90)	(2.18)	(2.60)
ARIN_TA	+	1.395***	1.581***	1.456***	1.391***
		(4.97)	(6.78)	(7.09)	(7.15)
GROWTH	?+	0.171	0.168*	0.165**	0.160**
		(1.60)	(1.72)	(2.38)	(2.31)
LOSS	+	0.081	0.100	0.047	0.059
		(1.35)	(1.18)	(0.96)	(1.18)
ROA	-	-0.486	-0.317	-0.475**	-0.418*
		(-1.45)	(-1.04)	(-2.09)	(-1.84)
LEV	+	-0.331*	0.063	-0.022	-0.039
		(-1.84)	(0.35)	(-0.16)	(-0.28)
CR	-	-0.064**	-0.037**	-0.056***	-0.051***
		(-2.37)	(-2.24)	(-4.21)	(-3.77)
LEADER_SIC	+	0.112**	0.045	0.098**	0.101***
		(2.28)	(0.84)	(2.57)	(2.69)
AUD_CH	?-	-0.096	-0.307*	-0.198	-0.197
		(-0.53)	(-1.71)	(-1.55)	(-1.55)
COMP_AF	-	-0.022	-0.015	-0.034**	-0.030*
		(-0.89)	(-0.69)	(-2.06)	(-1.83)
AUD_LAG	+	0.004**	0.007***	0.006***	0.006***
		(2.59)	(4.25)	(4.13)	(3.94)
DEC	+	0.119*	0.100	0.122***	0.113**
		(1.95)	(1.48)	(2.74)	(2.56)
D_RES	+	0.083	0.157**	0.097**	0.094*
		(1.52)	(2.06)	(2.03)	(1.96)
SOC_CAP	-	-0.112***	-0.089*	-0.074**	-0.089***
		(-3.04)	(-1.77)	(-2.40)	(-2.89)

(continued on next page)

(Table 10 continued) **(Dependent variable = LAF), OLS analysis**

Variables	Exp sign	(1) Unionized	(2) Non-Unionized	(3) Full Sample	(4) Full Sample
DIST_SEC	?-	-0.032*	-0.013	-0.025**	-0.023*
		(-1.92)	(-0.68)	(-1.98)	(-1.83)
POP	+	-0.013	0.027	0.005	0.002
		(-0.46)	(0.82)	(0.21)	(0.08)
LITERACY	+	1.101***	0.368	0.686***	0.770***
		(3.54)	(0.90)	(2.66)	(3.02)
(intercept)		8.393***	7.702***	8.165***	8.183***
		(18.08)	(15.42)	(20.44)	(20.97)
Industry & Year Effects		Included	Included	Included	Included
R2		0.796	0.797	0.804	0.806
Adj. R2		0.783	0.779	0.796	0.798
Observations		1,357	879	2,236	2,236
Mean VIF		1.566	1.509	1.505	1.521

Note: Standard errors are clustered at firm level, with t-statistics presented in parentheses. Values with asterisks *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively (2-tailed). All numbers are rounded to the third decimal place. See Appendix for variable definitions.